DX-V370
DX-V350

Ref. No.3564

ONKYO® SERVICE MANUAL

CD/VCD/LD PLAYER
MODEL DX-V370

Black and Golden models

CD/CDV/LD PLAYER
MODEL DX-V350

Black model

DX-V370(B) UWT,DX-V370(G)UWT	110V-240V AC, 50/60Hz
DX-V350(B) UWT	110V-240V AC, 50/60Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

ONKYO®
AUDIO COMPONENTS

SPECIFICATIONS

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1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).
When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

■ SPECIFICATIONS

General

System ..... LaserVision Disc system, Compact Disc digital audio system, and Compact Disc digital video system
Laser ..... Semiconductor laser: wavelength 780 nm
Power requirements: ..... AC 110-240 V, 50/60 Hz
Power consumption ..... 36 W
Weight ..... 6.6 kg
Dimensions ..... 420 (W) x 405 (D) x 132 (H) mm (Not including protruding cables, etc.)
Operating temperature ..... +5°C to +35°C
Operating humidity ..... 5% to 85% (no condensation)

Video Output (2 pairs)

Format ..... NTSC specifications PAL (VIDEO CD only)
Output level ..... 1 Vp-p (75Ω when loaded, synchronous negative)
Jacks ..... RCA jacks

Audio Output (2 pairs)

Output level
During analog audio output ..... 200 mVrms (1 kHz, 40%)
During digital audio output ..... 200 mVrms (1 kHz, –20 dB)
Number of channels 2
Jacks ..... RCA jacks

Digital audio characteristics

Frequency response	4 Hz to 20 kHz
S/N ratio	102 dB (EIAJ)
Wow and flutter	Limit of measurement (±0.001% W. PEAK) or lower (EIAJ)

Specifications for LDs conforming to EIAJ.

Other Terminals

CONTROL IN ..... Minijack (3.5ø)
CONTROL OUT ..... Minijack (3.5ø)
AC-3•RF OUTPUT ..... RCA jack

Accessories

Remote control unit 1
AA/R6P dry cell batteries 2
Audio cord 1
Video cord 1
Power cord 1
Operating Instructions 1

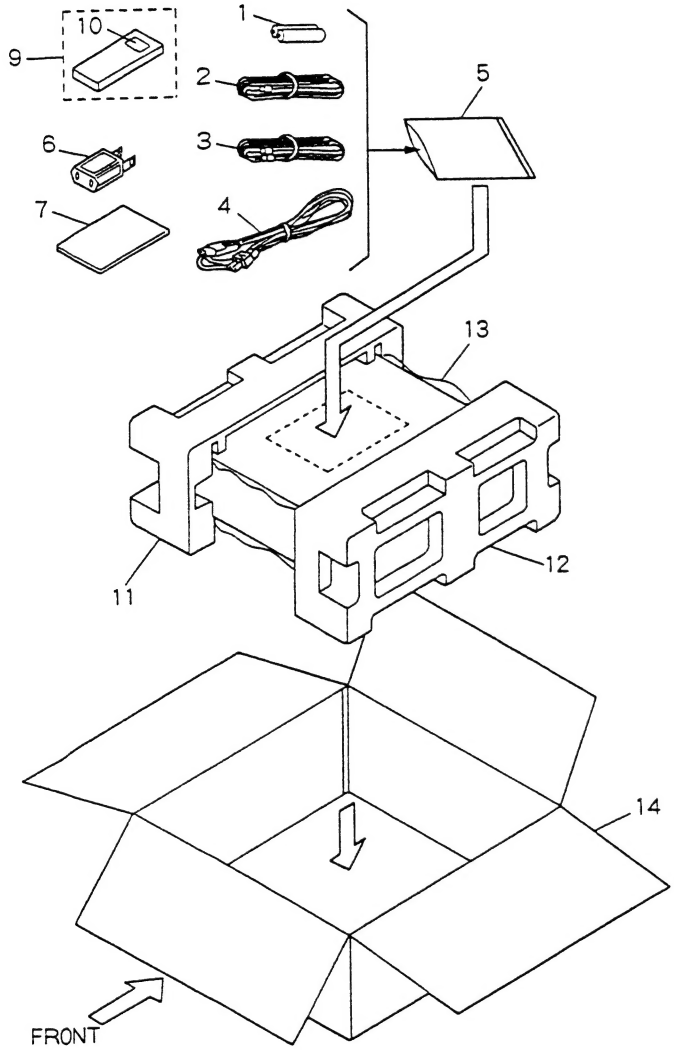
NOTE:

The specifications and design of this product are subject to change without notice, due to improvement.

2. EXPLODED VIEWS AND PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on the product are used for disassembly.*

2.1 PACKING



(1) PARTS LIST

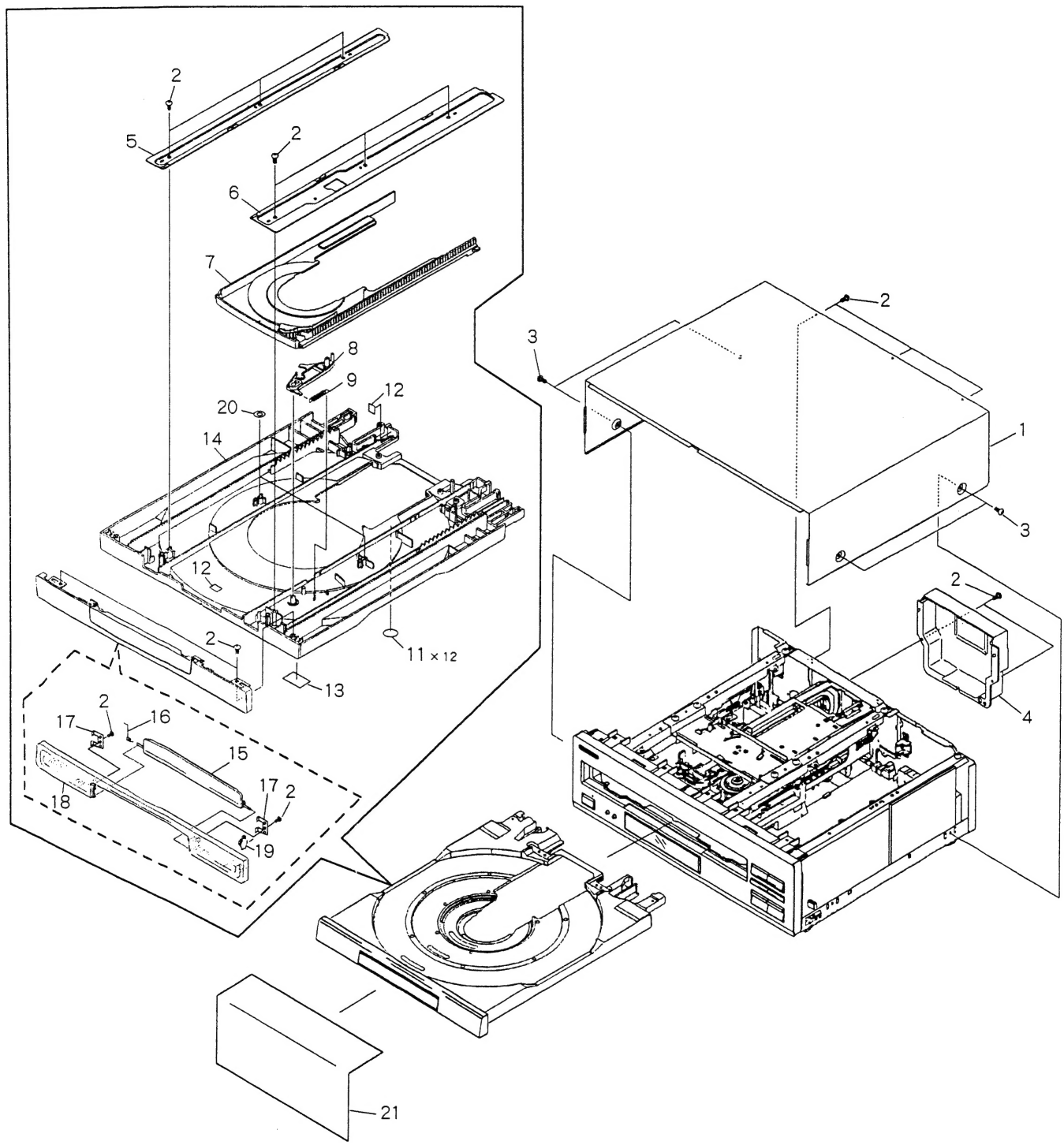
Mark	No.	Description	Part No.
NSP	1	Dry Cell Battery (R6P, AA)	VEM-013
	2	Video Cord	VDE1036
	3	Audio Cord	VDE1033
⚠	4	AC Power Cord	DDG1065
NSP	5	Polyethylene Bag	29100097-1AY
	6	Power Plug Adapter	VKX1007
	7	Operating Instructions (English/Chinese)	VRE1065
	8	• • • • •	
	9	Remote Control Unit	See Contrast table (2)
	10	Battery Cover	VNK3703
	11	Pad L	VHA1197
	12	Pad R	VHA1198
	13	Mirror Mat	DHL1006
	14	Packing Case	See Contrast table (2)

(2) CONTRAST TABLE

DX-V370 (B), DX-V370 (G) and DX-V350 (B) have the same construction except for the following:

Mark	No.	Symbol and Description	Part No.			Remarks
			DX-V370 (B)	DX-V370 (G)	DX-V350 (B)	
	9	Remote Control Unit	VXX2517	VXX2517	VXX2519	
	14	Packing Case	VHG1673	VHG1676	VHG1684	

2.2 EXTERIOR AND DISC TRAY SECTION



(1) PARTS LIST

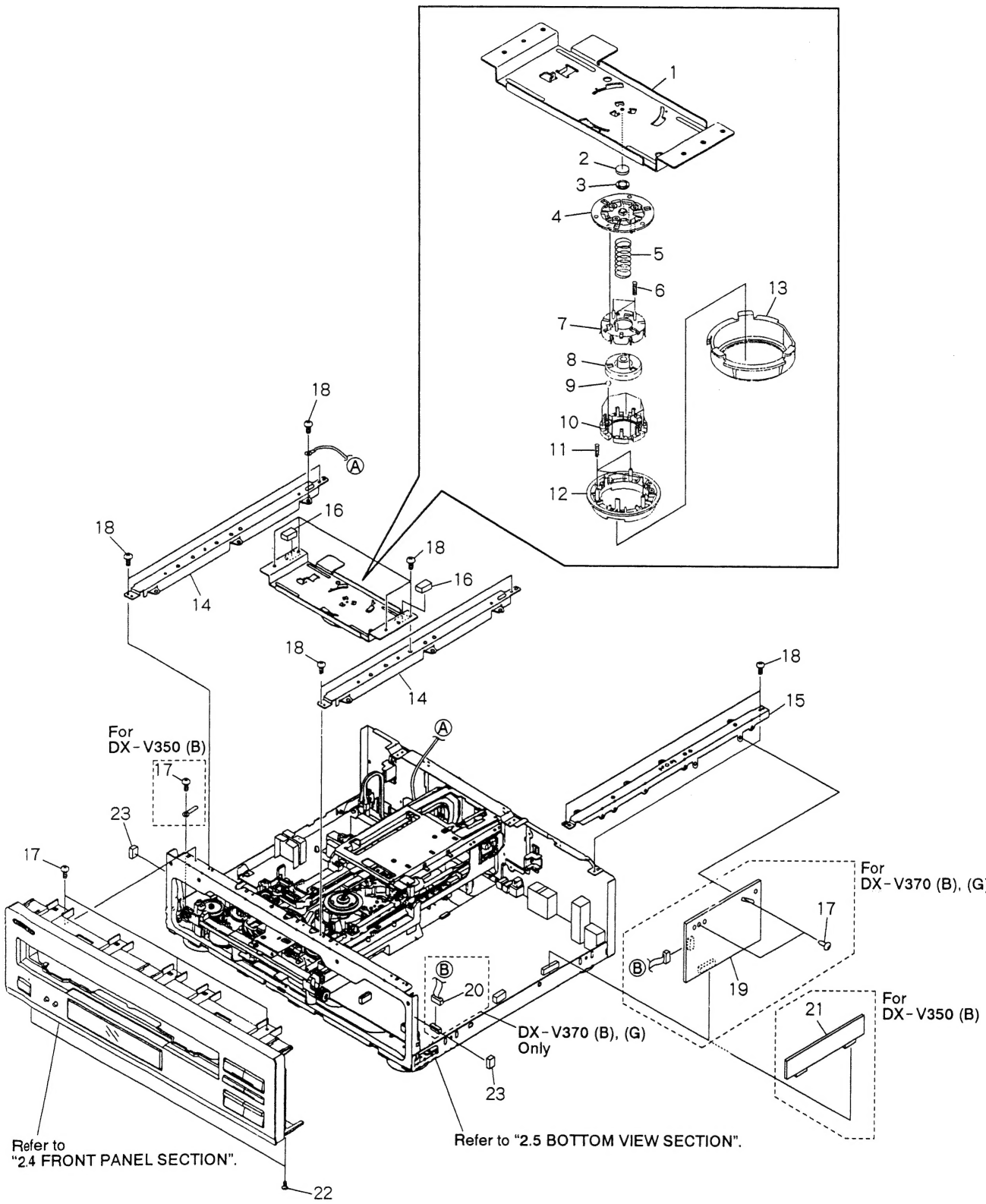
Mark	No.	Description	Part No.
	1	Cover	See Contrast table (2)
	2	Screw	BBZ30P080FMC
	3	Screw	See Contrast table (2)
	4	Rear Cover	See Contrast table (2)
	5	Guide Plate (R)	VNE1939
	6	Guide Plate (L)	VNE1938
	7	CD Tray	VNK3007
	8	Lock Plate	VNL1703
	9	Lock Plate Spring	VBH1188
	10	• • • • •	
	11	Cushion	VEC1682
	12	Damp Cushion	VEC1683
NSP	13	Label	VRW1289
	14	LD Tray Assy	VXA2173
	15	Door (CD) AS	See Contrast table (2)
	16	Door Spring	VBH1248
	17	Door Holder	VNE1967
	18	Door (LD)	See Contrast table (2)
	19	Damper Assy	VXA1999
	20	Washer	VEC1254
	21	Mirror Mat	VHL1039

(2) CONTRAST TABLE

DX-V370 (B), DX-V370 (G) and DX-V350 (B) have the same construction except for the following:

Mark	No.	Symbol and Description	Part No.			Remarks
			DX-V370 (B)	DX-V370 (G)	DX-V350 (B)	
	1	Cover	28184675	28184676	28184675	
	3	Screw	BCZ40P060FZK	BCZ40P060FNI	BCZ40P060FZK	
	4	Rear Cover	VNK4020	VNK4020	VNK4034	
	15	Door (CD) AS	28148361	28148362	28148328	
	18	Door (LD)	28148363	28148364	28148363	

2.3 TOP VIEW SECTION



(1) PARTS LIST

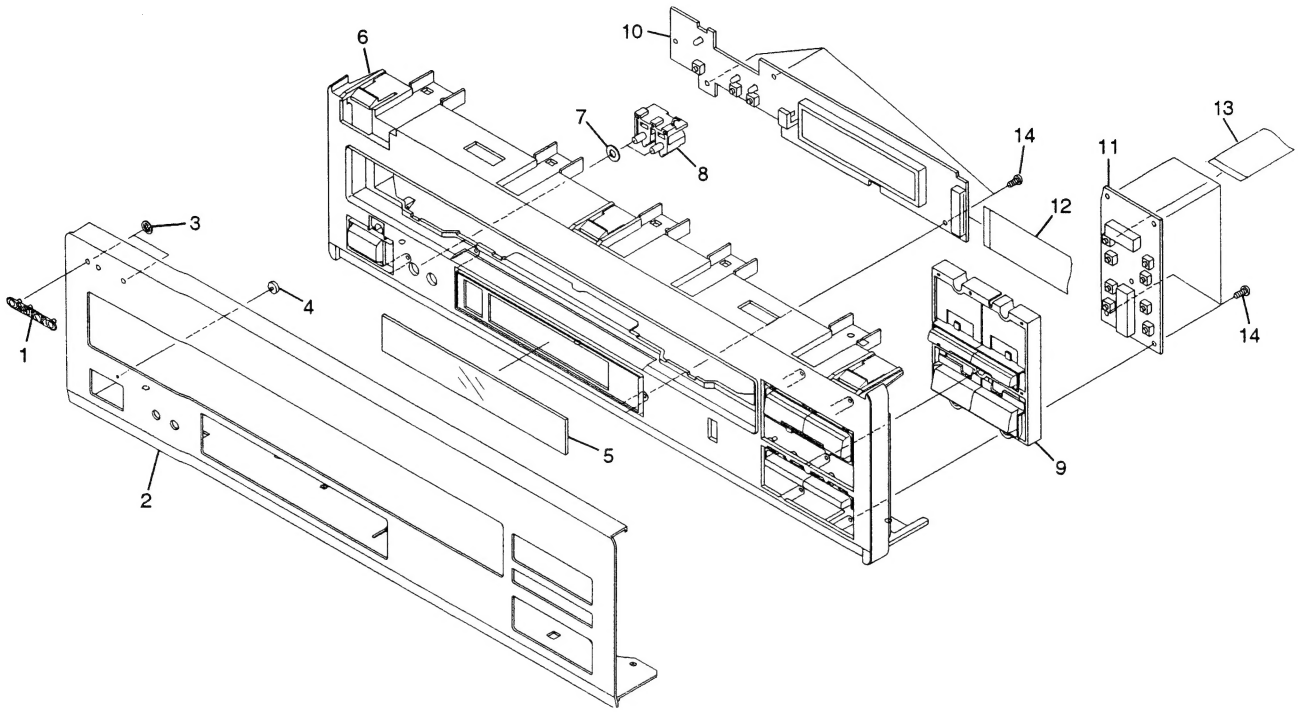
Mark	No.	Description	Part No.
	1	Center Plate	VNE1971
	2	Rubber Mat	VEB1114
	3	Thrust Holder	VNL1663
	4	Clamper Head	VNL1603
	5	LD Spring	VBH1240
	6	Cover Spring	VBH1234
	7	Ball Cover	VNL1602
	8	LD Hab	VNT1047
	9	Ball	VNX1013
	10	Ball Guide	VNL1616
	11	Clamp Spring	VBH1239
	12	Clamper	VNL1604
	13	Clamper Holder	VNL1680
	14	Center Bracket	VNE1965
NSP	15	PCB Holder	See Contrast table (2)
NSP	16	Damp Cushion	VEC1602
	17	Screw	IBZ30P080FMC
	18	Screw	BBZ30P080FMC
	19	VCDB Assy	See Contrast table (2)
	20	Connector Assy	See Contrast table (2)
NSP	21	CNNB Assy	See Contrast table (2)
	22	Screw	BBT30P080FCC
NSP	23	Rubber Spacer	PEB1128

(2) CONTRAST TABLE

DX-V370 (B), DX-V370 (G) and DX-V350 (B) have the same construction except for the following:

Mark	No.	Symbol and Description	Part No.			Remarks
			DX-V370 (B)	DX-V370 (G)	DX-V350 (B)	
NSP	15	PCB Holder	VNE2087	VNE2087	VNE1964	
	19	VCDB Assy	VWV1508	VWV1508	Not used	
	20	Connector Assy (3P)	VKP2133	VKP2133	Not used	
NSP	21	CNNB Assy	Not used	Not used	VWV1472	

2.4 FRONT SECTION



(1) PARTS LIST

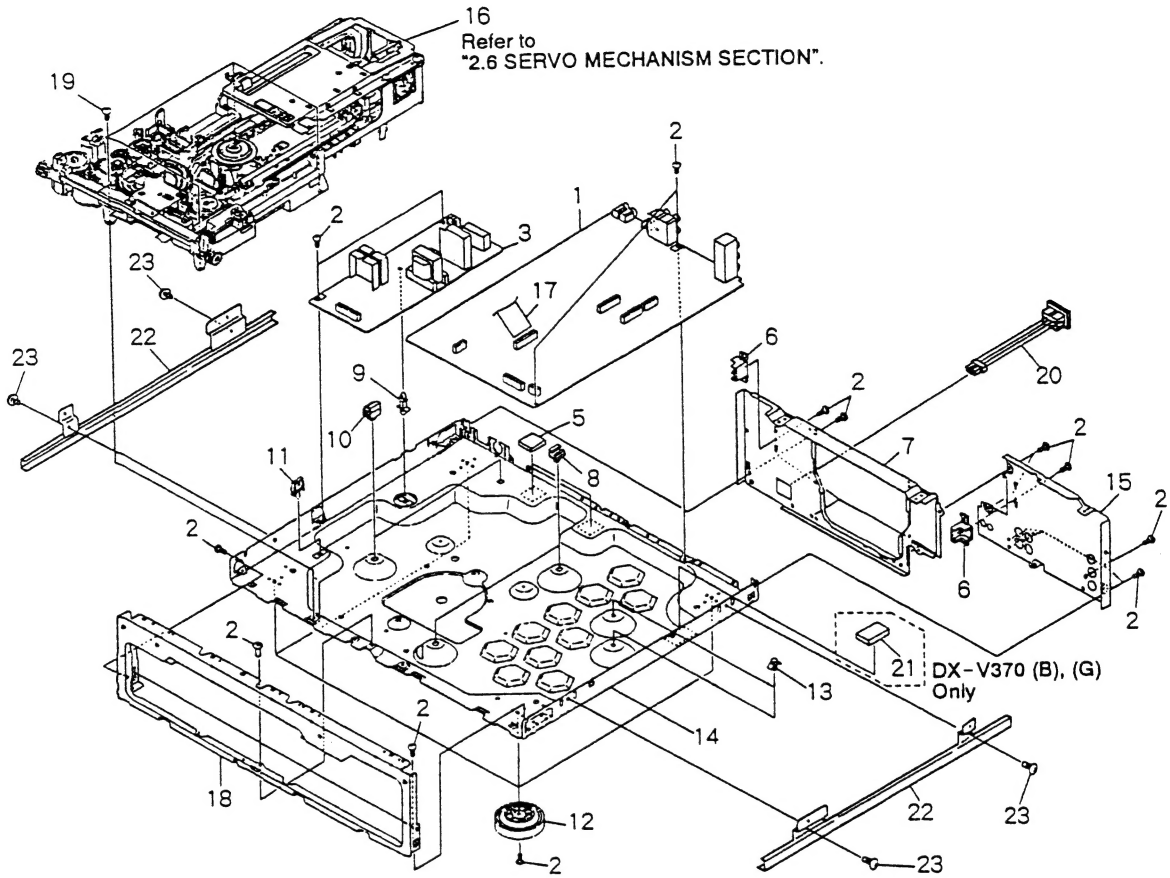
Mark	No.	Description	Part No.
	1	Badge	See Contrast table (2)
	2	F Panel	See Contrast table (2)
	3	CS Ring	Z39-205
	4	Facet	28198778Y
	5	Clear PLT	See Contrast table (2)
	6	F Bracket	See Contrast table (2)
	7	Spacer	27270142
	8	L Key C	VNK3070
	9	Knob (PLAY)	See Contrast table (2)
	10	FLKY Assy	See Contrast table (2)
NSP	11	KEYB Assy	See Contrast table (2)
	12	Flexible Cable (21P)	VDA1567
	13	Flexible Cable	See Contrast table (2)
	14	Screw	BBZ30P080FMC

(2) CONTRAST TABLE

DX-V370(B), DX-V370(G) and DX-V350(B) have the same construction except for the following :

Mark	No.	Symbol and Description	Part No.			Remarks
			DX-V370(B)	DX-V370(G)	DX-V350(B)	
	1	Badge	28135243	28135242	28135243	
	2	F Panel	27211889	27211890	27211910	
	5	Clear PLT	28191769A	28191770A	28191769A	
	6	F Bracket	27110975	27110976	27110975	
	9	Knob (PLAY)	28325487	28325488	28325487	
	10	FLKY Assy	VWG1824	VWG1824	VWG1810	
NSP	11	KEYB Assy	VWG1823	VWG1823	Not used	
NSP	11	KEYB Assy	Not used	Not used	VWG1811	
	13	Flexible Cable (22P)	VDA1551	VDA1551	Not used	
	13	Flexible Cable (16P)	Not used	Not used	VDA1566	

2.5 BOTTOM VIEW SECTION



(1) PARTS LIST

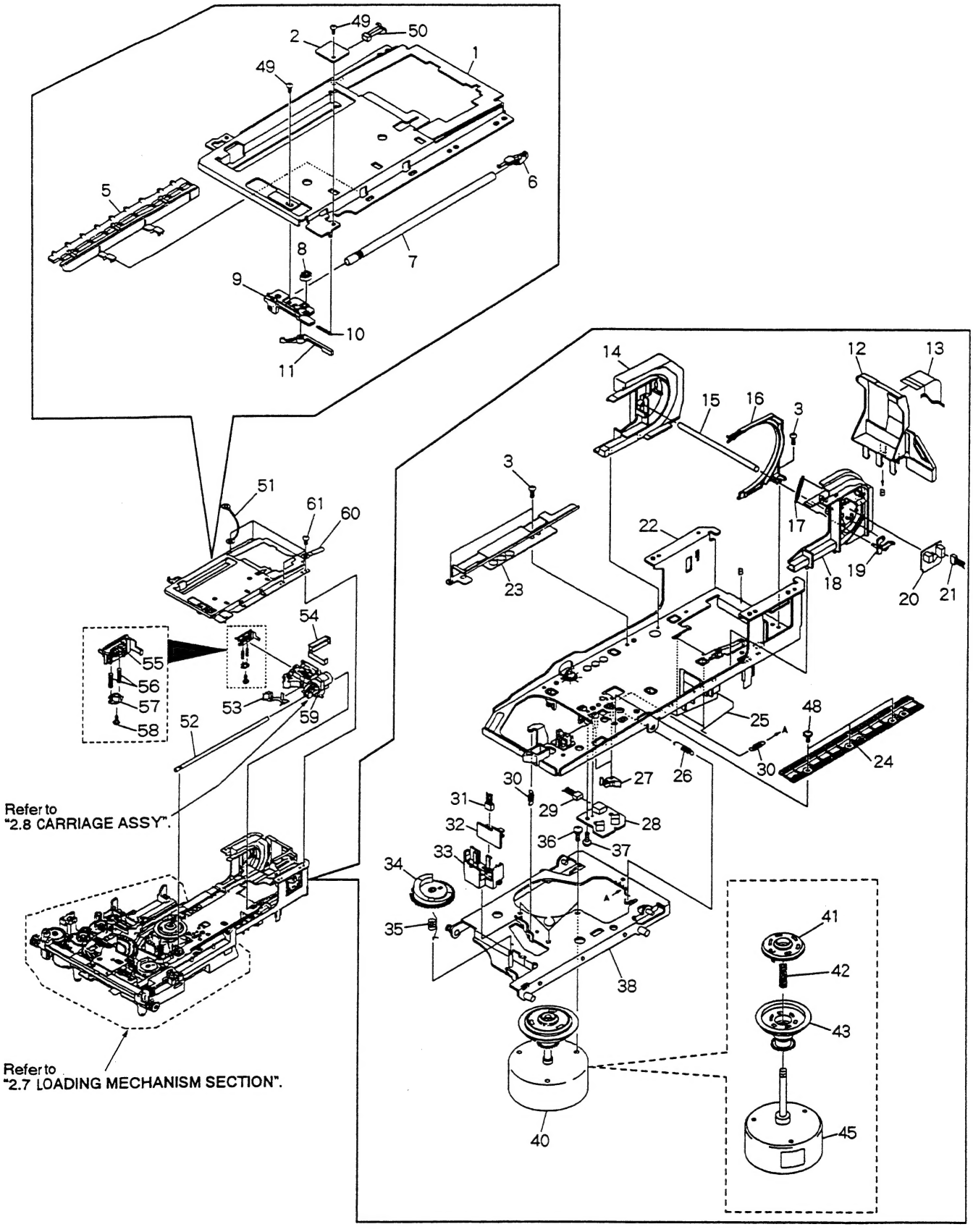
Mark	No.	Description	Part No.
	1	MOTHER Assy	See Contrast table (2)
	2	Screw	BBZ30P080FMC
⚠	3	POWER SUPPLY Assy	VWR1267
	4	• • • • •	
NSP	5	Rubber Spacer	VEB1252
	6	Tray Stopper	VNL1657
	7	Rear Panel R	VNA1854
NSP	8	P. Plate Holder	PNY-405
NSP	9	PC Support	VEC-269
	10	PCB Hinge	VEC1174
NSP	11	Wire Clip (H)	VEC1181
	12	Insulator Assy	DXA1490
	13	Card Spacer A	VEC1708
NSP	14	Chassis	VNA1857
	15	Rear Panel L	See Contrast table (2)
NSP	16	Mechanism Assy	VWT1131
	17	Flexible Cable (21P) (MOTHER CN102-POWER SUPPLY CN3)	VDA1465
NSP	18	Panel Holder	VNA1835
	19	Screw	BBZ30P100FMC
⚠	20	AC Inlet Assy	VKP2116
	21	Spacer	See Contrast table (2)
NSP	22	Side Plate	DND1122
	23	Screw	BCZ40P060FZK

(2) CONTRAST TABLE

DX-V370 (B), DX-V370 (G) and DX-V350 (B) have the same construction except for the following:

Mark	No.	Symbol and Description	Part No.			Remarks
			DX-V370 (B)	DX-V370 (G)	DX-V350 (B)	
	1	MOTHER Assy	VWS1306	VWS1306	VWS1307	
	15	Rear Panel L	VNA1853	VNA1853	VNA1864	
	21	Spacer	REB1171	REB1171	Not used	

2.6 SERVO MECHANISM SECTION

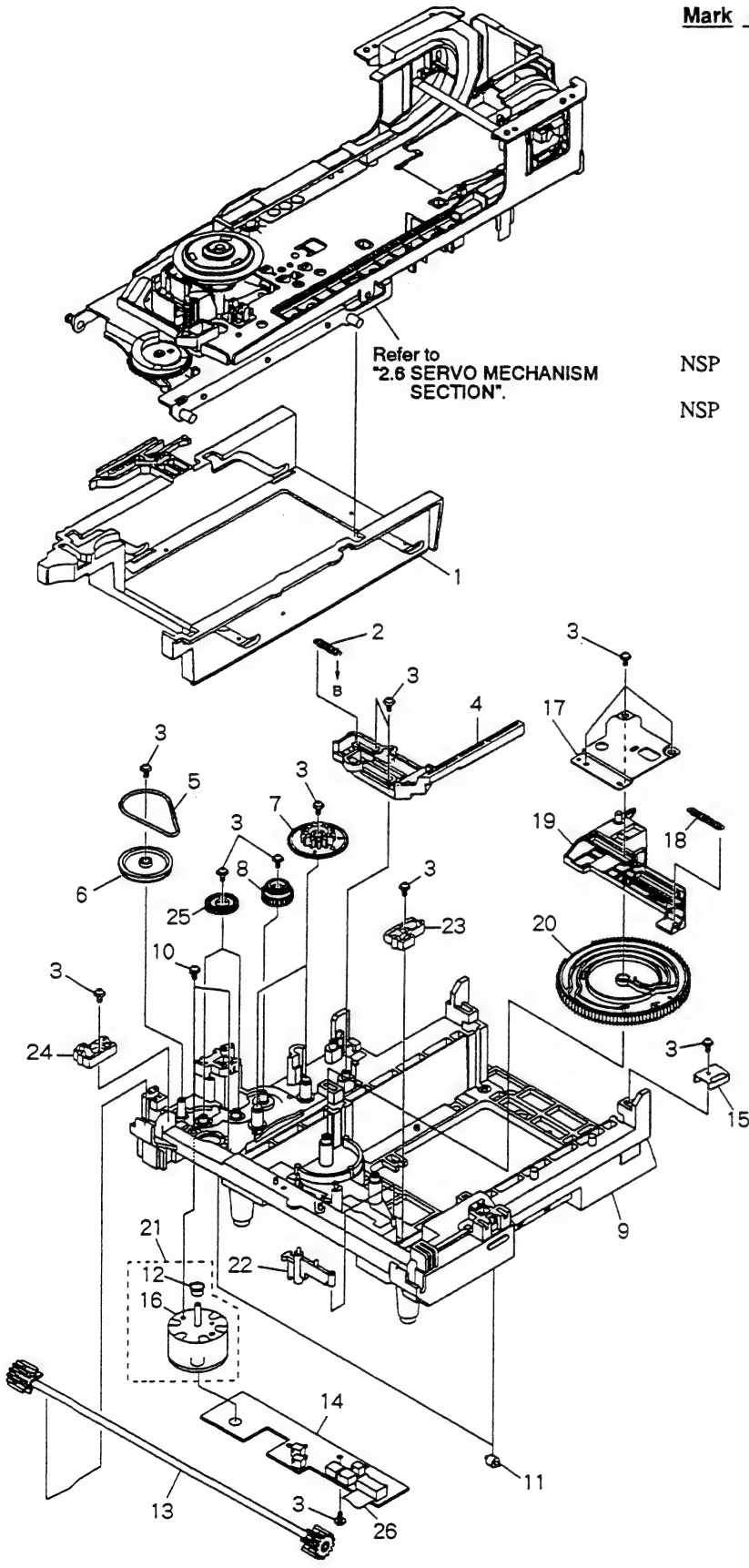


Parts List

Mark	No.	Description	Part No.
	1	Tilt Base (upper)	VNE1969
NSP	2	BISB Assy	VWG1558
	3	Screw	BBZ30P060FMC
	4	• • • • •	
	5	Rack (Upper)	VNL1679
	6	Shaft Stay	VNL1671
	7	Carriage Shaft (upper)	VLL1478
	8	B Cam	VNL1673
	9	Shaft Support	VNL1672
	10	Support Spring	VBH1265
	11	SW Lever (B)	VNL1678
	12	Large hill	VNL1682
	13	Flexible Cable (23P)	VDA1528
	14	Turn Guide	VNL1701
	15	FFC Style Shaft	VLL1474
	16	Guide	VNL1674
	17	Lever Spring	VBH1266
	18	Turn Gear	VNL1702
	19	SW Lever (T)	VNL1695
NSP	20	TNSB Assy	VWG1557
	21	Housing Assy (3P, Black)	VKP2059
	22	Tilt Base (Under)	VNL1670
	23	TAN Guide	VNE1973
	24	CA Rack	VNL1647
	25	FFC Style Spring	VBH1270
	26	Thrust Spring	VBH1245
	27	CA - SW Lever	VNL1644
NSP	28	PKSB Assy	VWG1555
	29	Housing Assy (3P, Blue)	VKP2045
	30	Tilt Spring	VBH1263

Mark	No.	Description	Part No.
	31	Housing Assy (3P, Yellow)	VKP2046
NSP	32	FG Assy	VWG1556
	33	FG Base	VNL1781
	34	Tilt Cam	VNL1643
	35	Tilt Cam Spring	VBH1243
	36	Screw	PMA30P050FMC
	37	Screw	IBZ26P120FMC
	38	Motor Base	VNE1941
	39	• • • • •	
	40	Spindle Motor Assy	VXA2271
	41	PRC Hub	VNL1684
	42	Centering Spring	VBH1269
NSP	43	R Turn Table Assy	VXA2225
	44	• • • • •	
NSP	45	Spindle Motor	VXM1057
	46	• • • • •	
	47	• • • • •	
	48	Screw	IBZ26P060FMC
	49	Screw	BPZ20P040FZK
	50	Housing Assy (2P, Red)	VKP2060
NSP	51	Earth Lead Unit	DE007VF0
	52	Carriage Shaft (Under)	VLL1493
	53	Body Guard	VNL1681
	54	FFC Holder	VNL1706
	55	CA Guide	VNL1668
	56	TAN Spring (B)	VBH1264
	57	TAN Lever (B)	VNL1669
	58	Screw	PMZ20P060FZK
	59	Carriage Assy	VWT1110
NSP	60	Cord Binder	ZCB - 069Z
	61	Screw	BBZ30P080FMC

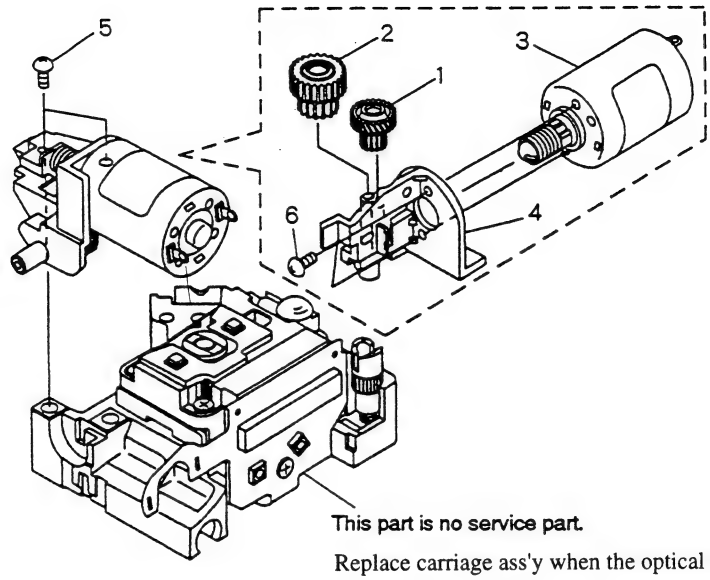
2.7 LOADING MECHANISM SECTION



Parts List

Mark	No.	Description	Part No.
	1	Clamp Cam	VNL1633
	2	CDP Spring	VBH1191
	3	Screw	Z39-019
	4	CD Plate	VNL1685
	5	Rubber Belt	VEB1184
	6	Gear Pulley	VNL1662
	7	Twin Gear	VNL1626
	8	Center Gear	VNL1660
	9	Mechanism Base	VNK3239
	10	Screw	BMZ26P040FMC
	11	Roller	VNL1042
NSP	12	Motor Pulley	VNL1630
	13	Synchro Gear Assy	VXA2105
NSP	14	LMSB Assy	VWG1612
	15	Cam Holder	VNE2032
	16	Carriage Motor	VXM1033
	17	Shaft Holder	VNE1942
	18	CAS Spring	VBH1190
	19	Cam Plate	VNL1631
	20	Cam Gear	VNL1625
	21	Loading Motor Assy	VXX2045
	22	MB-SW Lever	VNL1664
	23	Slider (R)	VNL1666
	24	Slider (L)	VNL1665
	25	Double Gear	VNL1661
	26	Flexible Cable (12P)	VDA1485

2.8 CARRIAGE ASSY



This part is no service part.

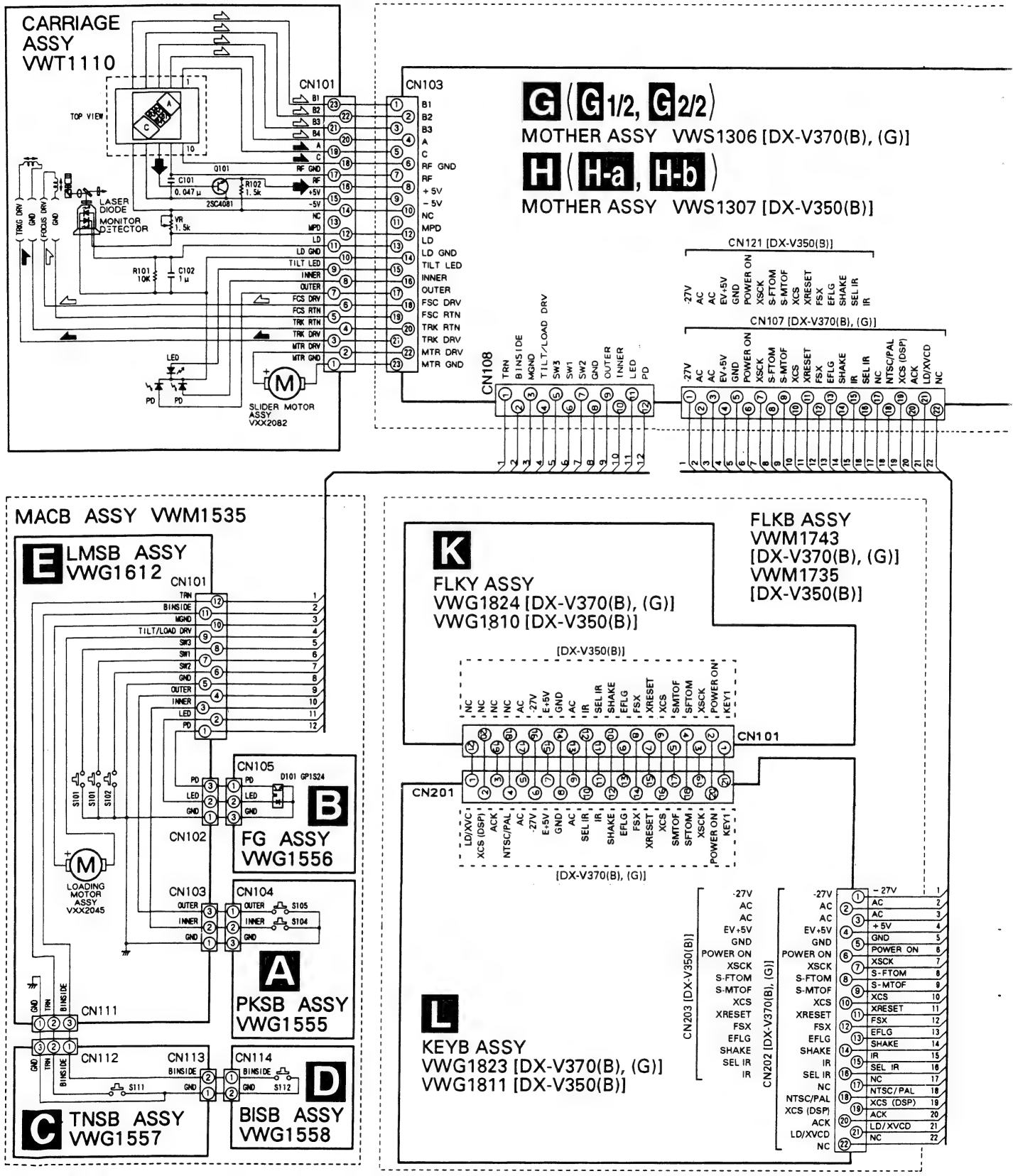
Replace carriage ass'y when the optical pick-up is replaced.
Part No. VWT1110

Parts List

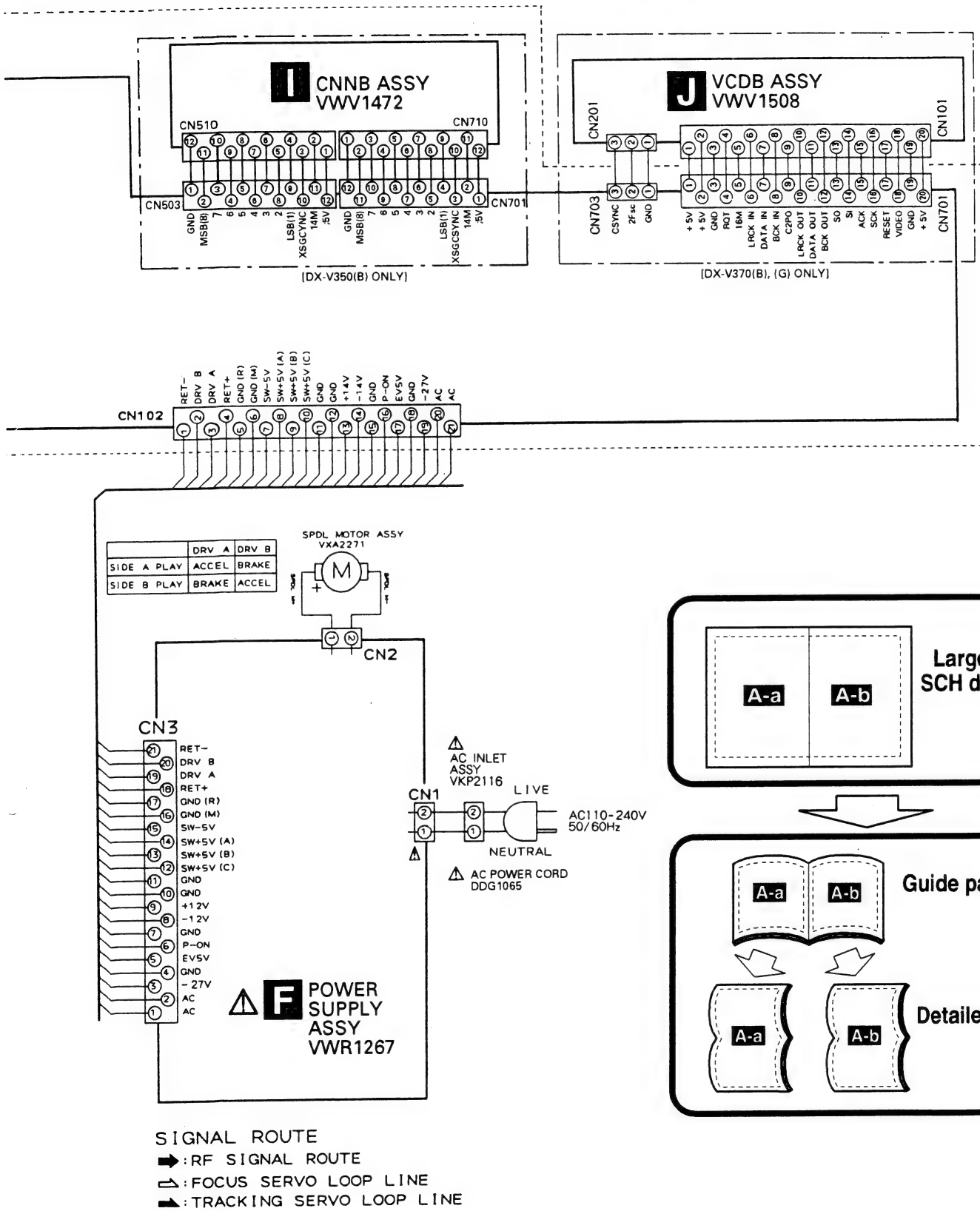
Mark	No.	Description	Part No.
	1	CA Gear (A)	VNL1638
	2	CA Gear (B)	VNL1639
	3	Slider Motor Assy	VXX2082
	4	M Holder	VNL1700
	5	Screw	PBZ20P060FMC
	6	Screw	PMZ20P030FMC

3. SCHEMATIC DIAGRAM

3.1 OVERALL CONNECTION, PKSB, FG, TNSB, BISB, LMSB AND CARRIAGE ASSEMBLIES



NOTE : When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "PCB PARTS LIST".

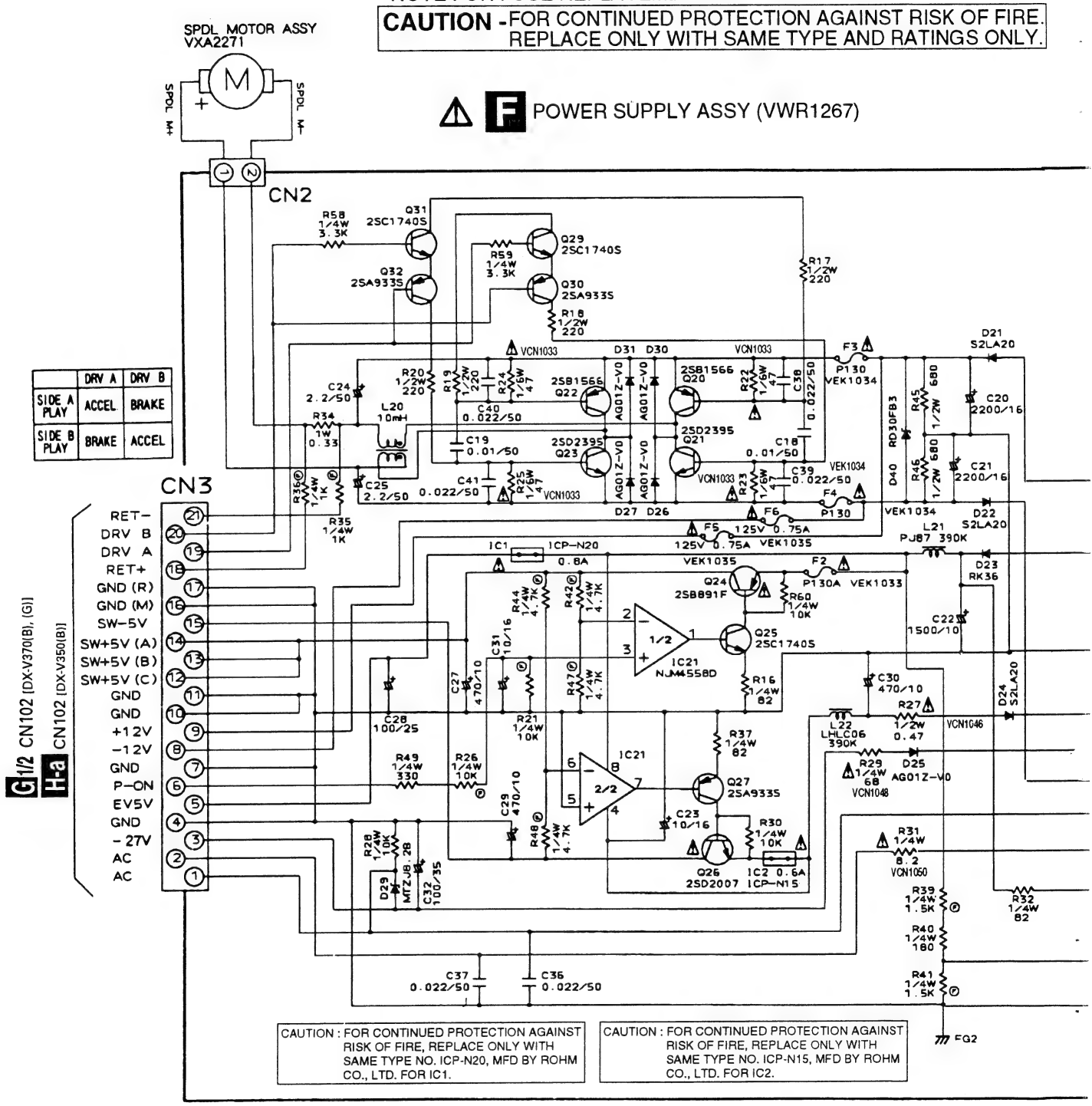


SIGNAL ROUTE
➡ : RF SIGNAL ROUTE
⬅ : FOCUS SERVO LOOP LINE
➡ : TRACKING SERVO LOOP LINE

3.2 POWER SUPPLY ASSY

• NOTE FOR FUSE REPLACEMENT

CAUTION -FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE AND RATINGS ONLY.



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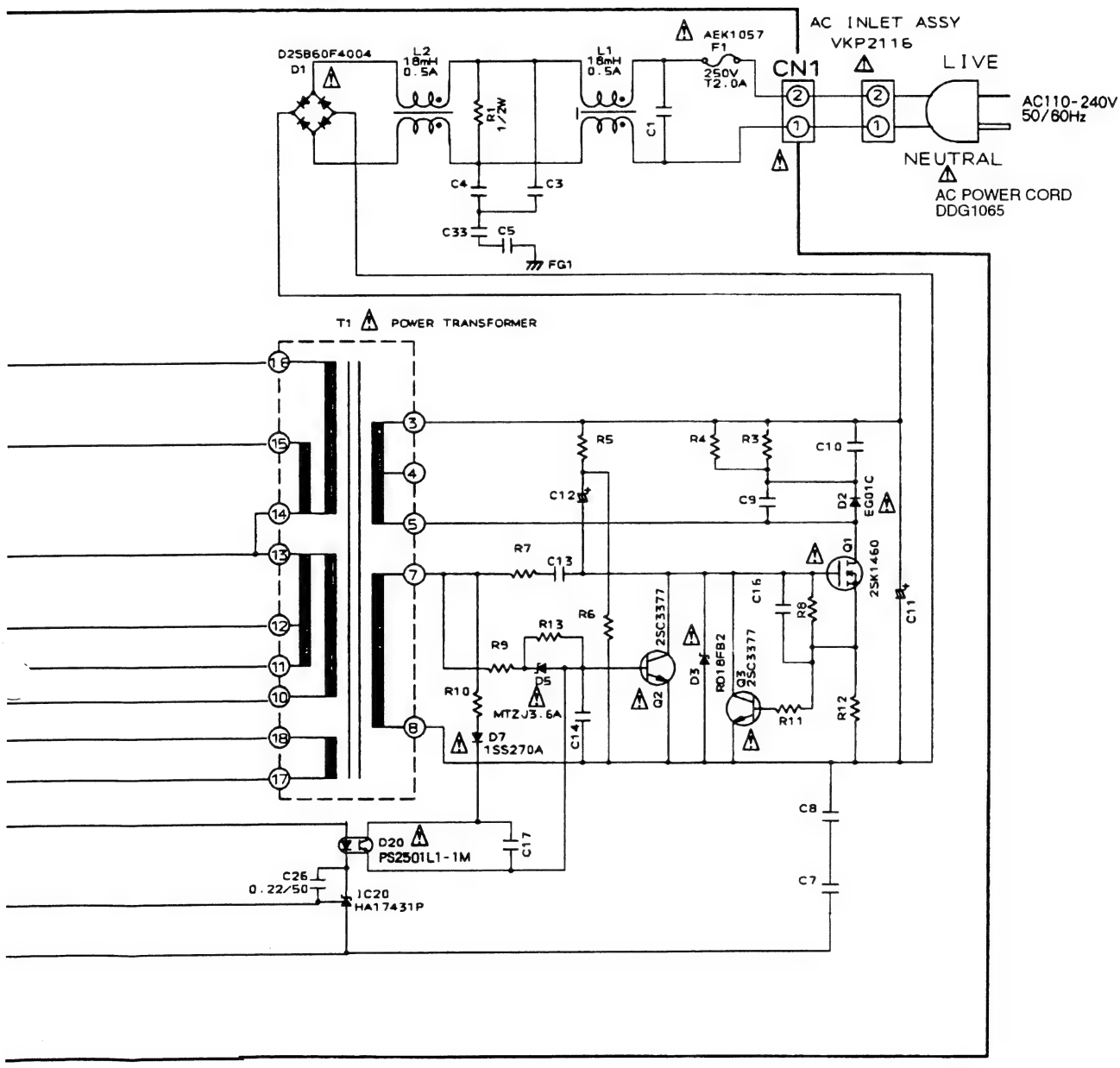
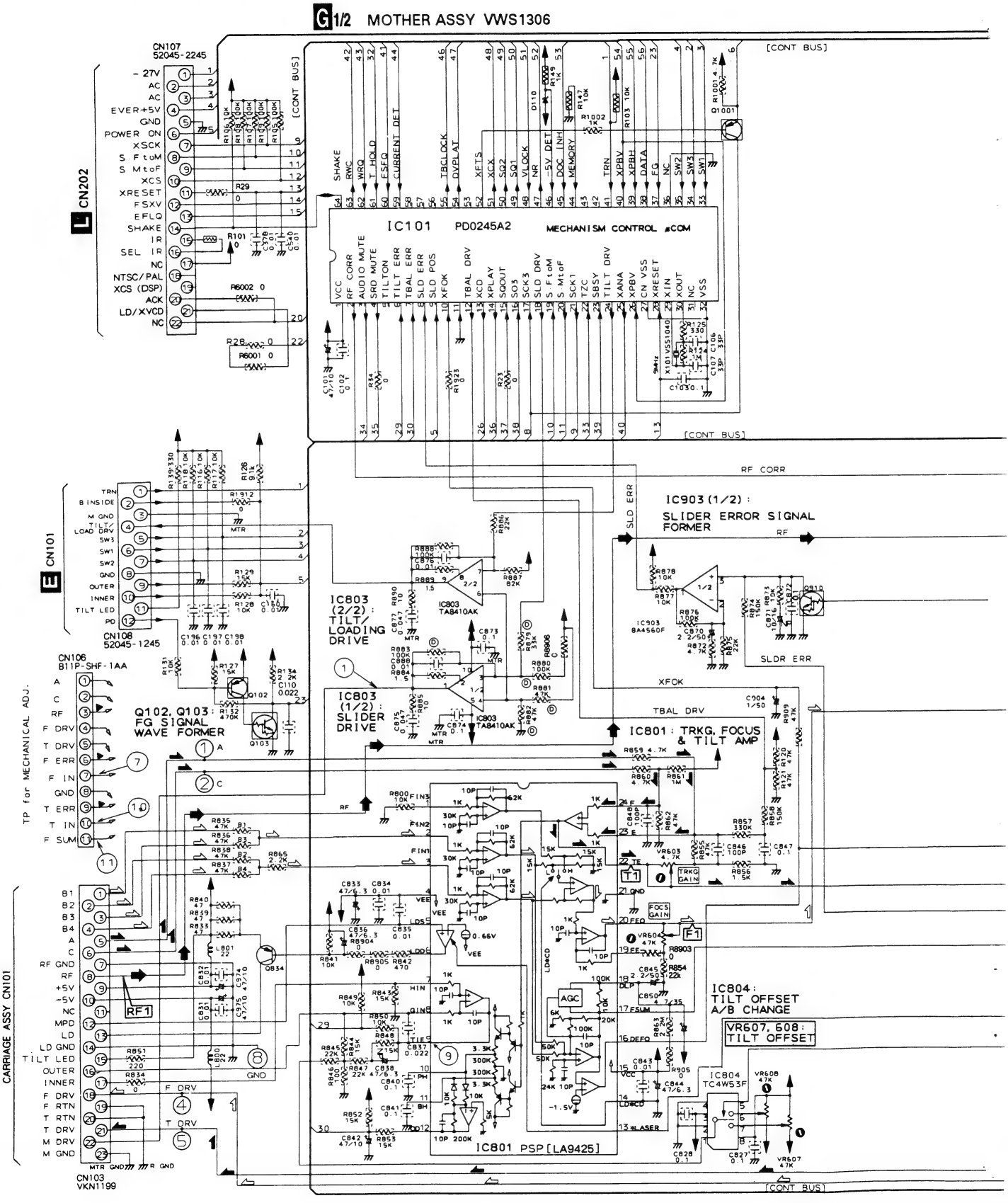
《 NOTE OF SPARE PARTS IN POWER SUPPLY (SYPS) ASSY 》

- In case of repairing, use the described parts only to prevent an accident.
- Please write the red √ mark on the board when the primary section of POWER SUPPLY (SYPS) Assy is repaire.
- Please take care to keep the space, not touching other parts when replacing the parts.

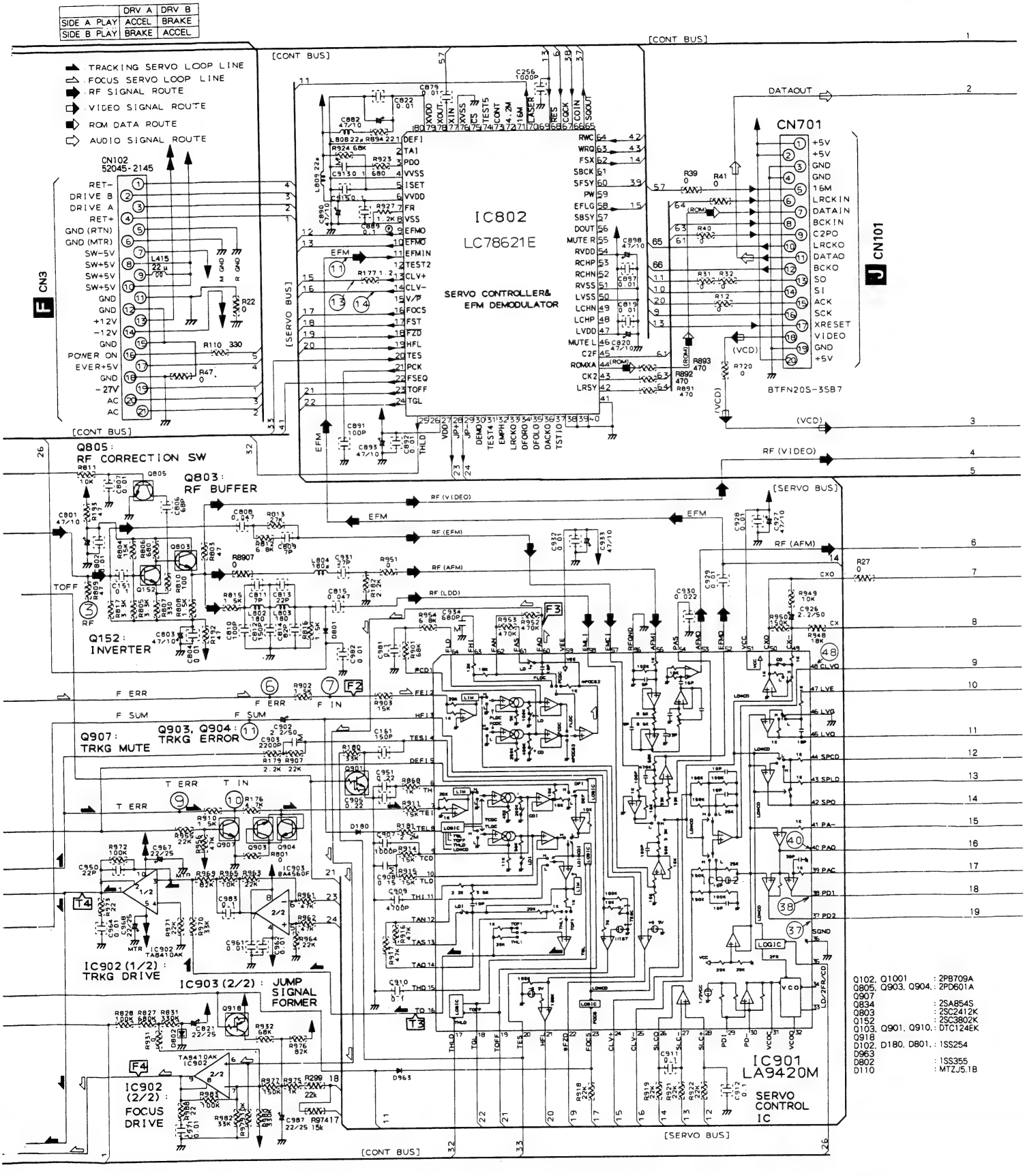


F

3.3 MOTHER ASSY (1/2) [DX-V370(B), (G)]



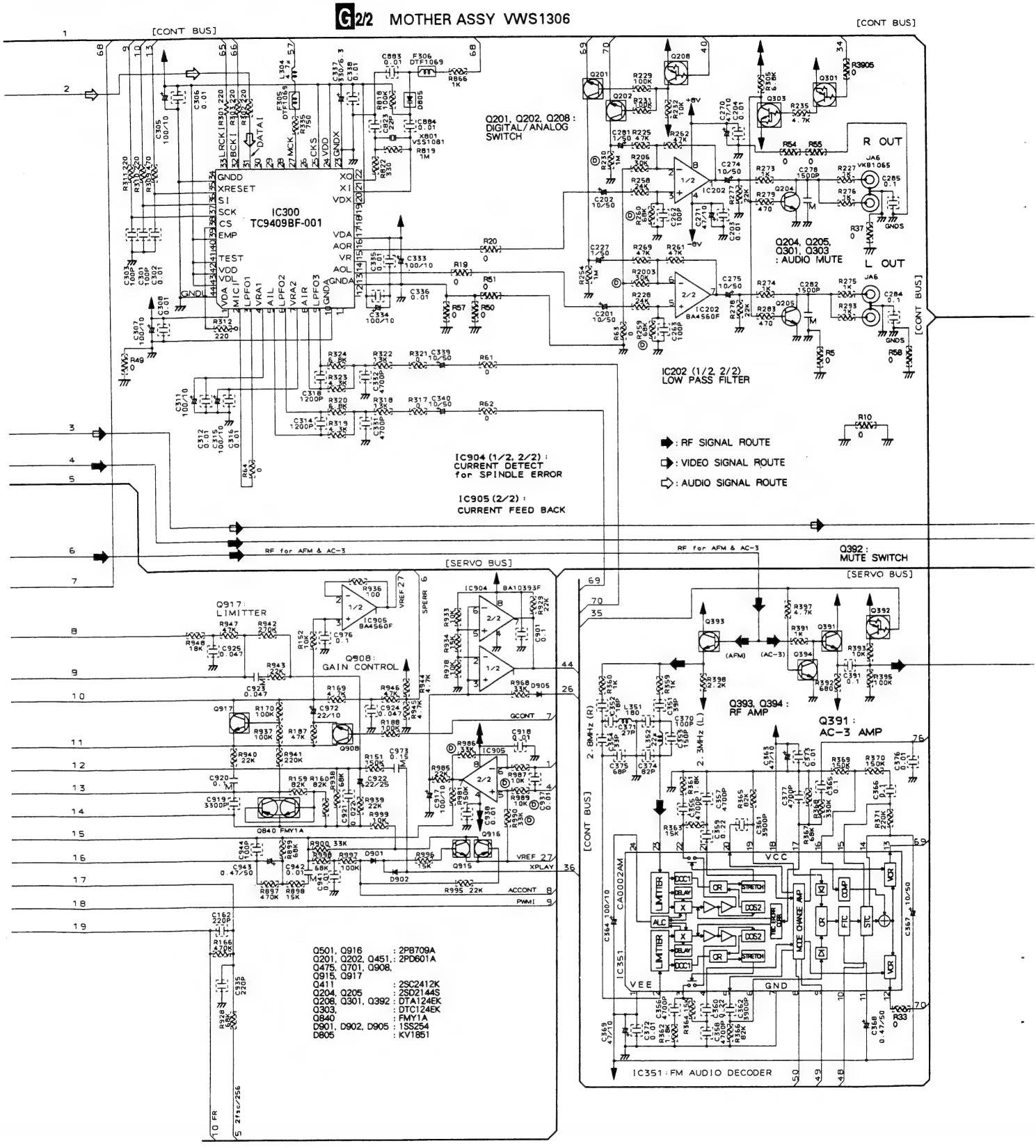
G 1/2

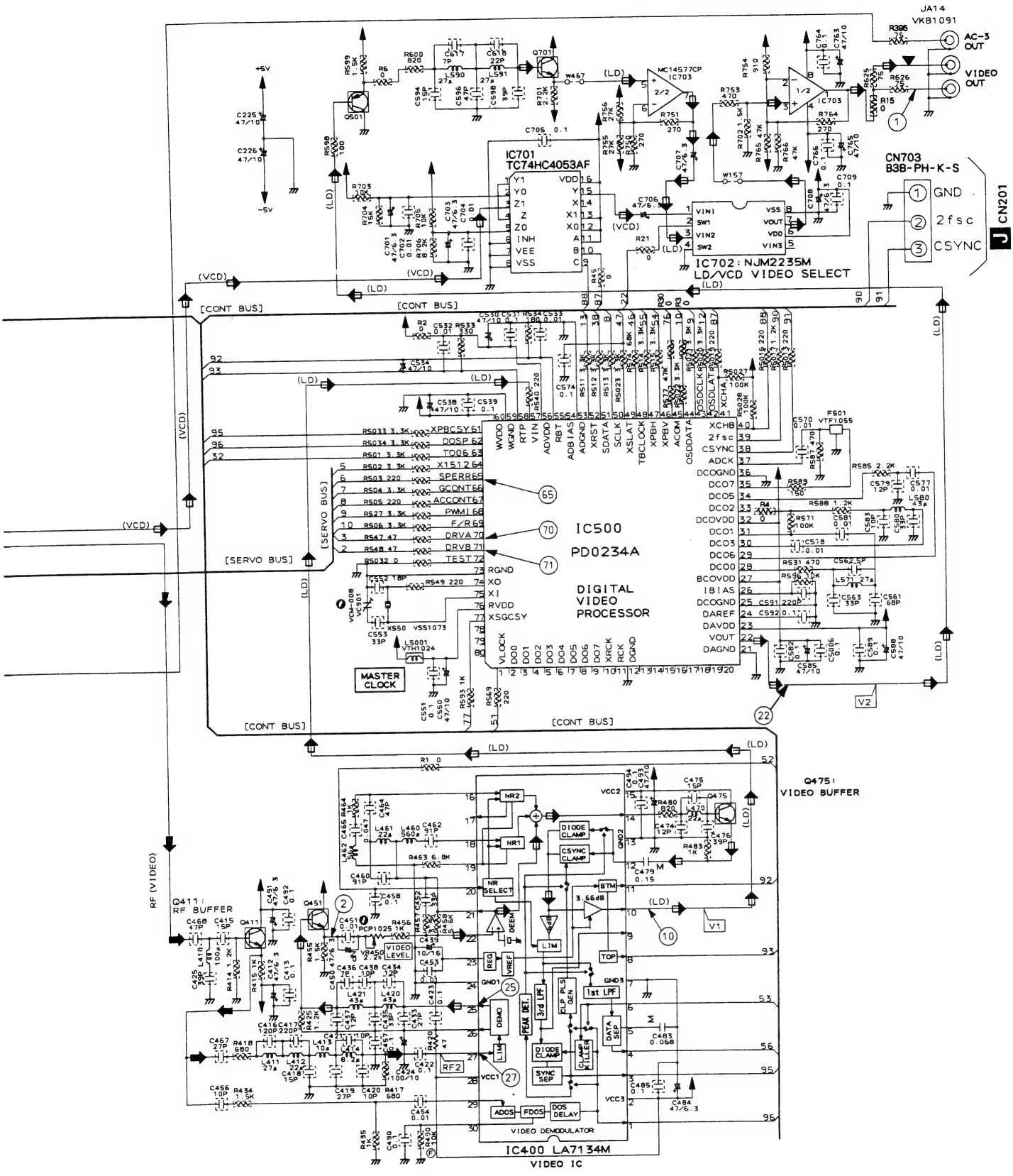

DRV A DRV B
SIDE A PLAY ACCEL BRAKE
SIDE B PLAY BRAKE ACCEL
TRACKING SERVO LOOP LINE
FOCUS SERVO LOOP LINE
RF SIGNAL ROUTE
VIDEO SIGNAL ROUTE
ROM DATA ROUTE
AUDIO SIGNAL ROUTE
CN102 52045-2145
CN3
IC802
LC78621E
SERVO CONTROLLER& EFM DEMODULATOR
CN701
CN101
BTFN20S-3SB7
Q805: RF CORRECTION SW
Q803: RF BUFFER
Q152: INVERTER
Q907: TRKG MUTE
Q903, Q904: TRKG ERROR
IC902 (1/2): TRKG DRIVE
IC903 (2/2): JUMP SIGNAL FORMER
IC902 (2/2): FOCUS DRIVE
IC901 LA9420M SERVO CONTROL IC
[CONT BUS]
[SERVO BUS]
RF (VIDEO)
RF (EFM)
RF (AFM)
RF (LDD)
EFM
F ERR
F SUM
T ERR
T IN
TOFF
DATAOUT
(VCD)
(ROM)
Q102, Q1001 : 2PB709A
Q805, Q903, Q904, : 2PD601A
Q907
Q834 : 2SA854S
Q803 : 2SC2412K
Q152 : 2SC3802K
Q103, Q901, Q910, : DTC124EK
Q918
D102, D180, D801, : 1SS254
D963
D802 : 1SS355
D110 : MTZJ5.1B

G 1/2

3.4 MOTHER ASSY (2/2) [DX-V370(B), (G)]

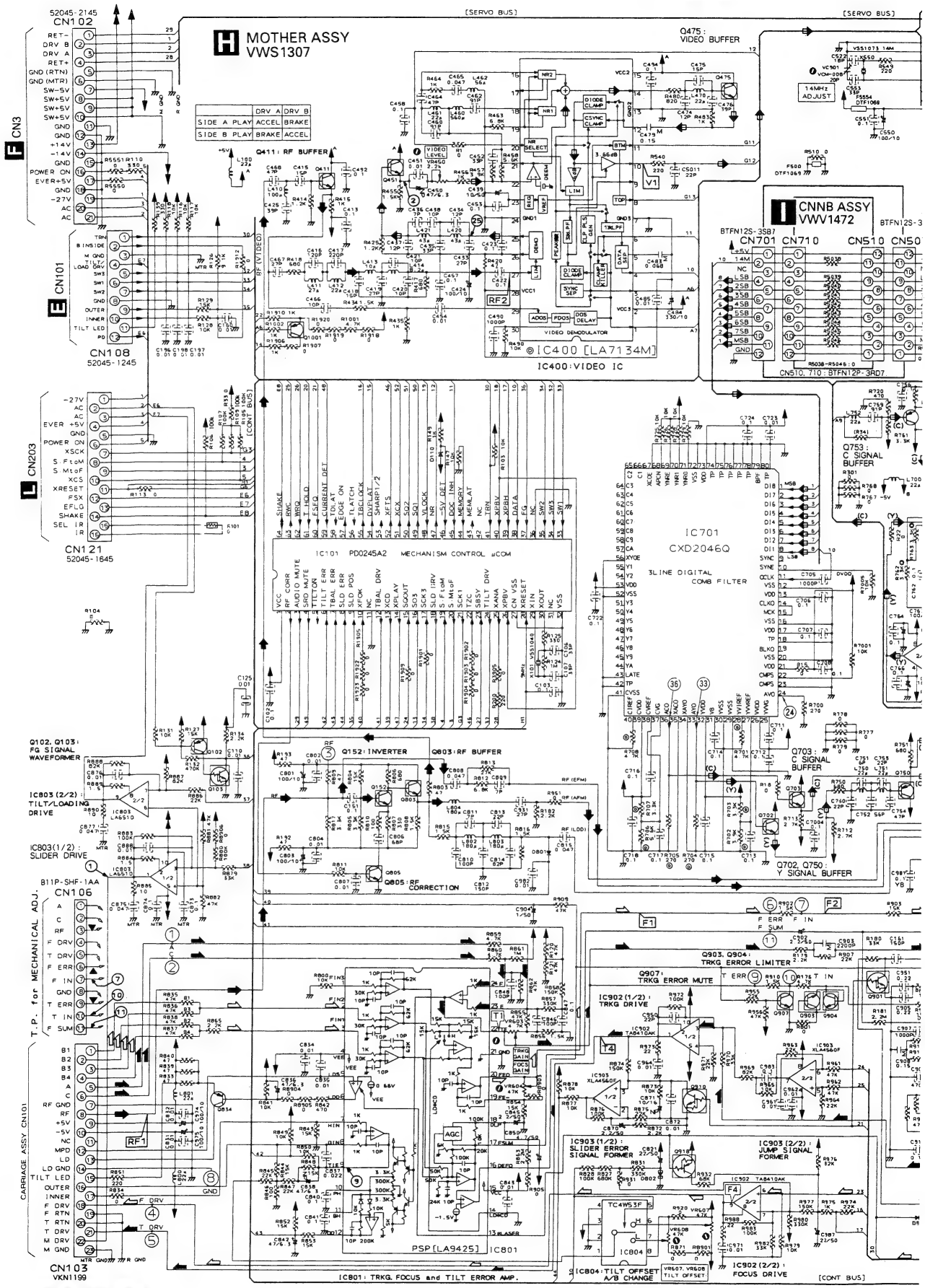
G2/2 MOTHER ASSY VWS1306



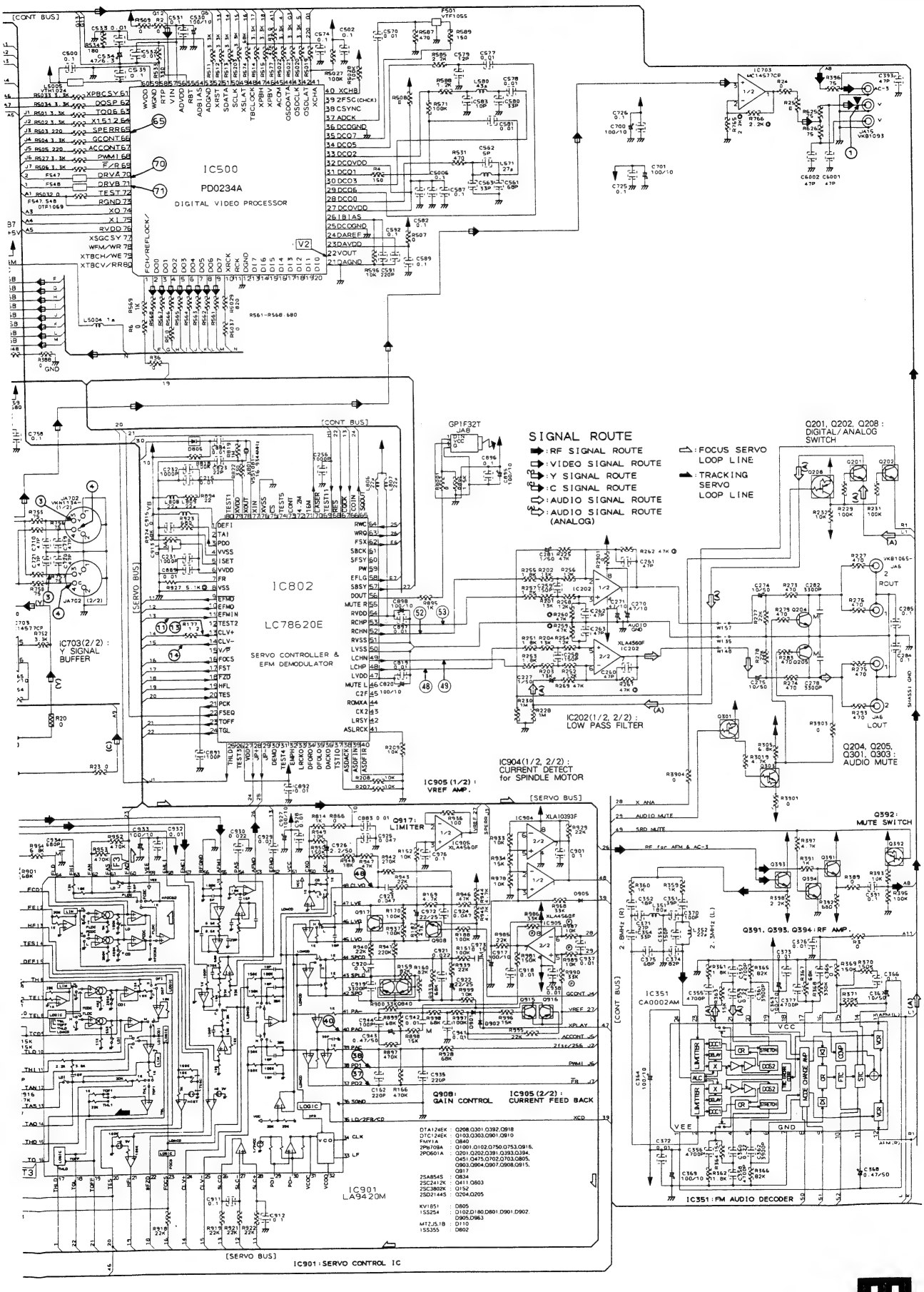

IC701
TC74HC4053AF
IC702 : NJM2235M
LD/VCD VIDEO SELECT
IC500
PD0234A
DIGITAL
VIDEO
PROCESSOR
MASTER
CLOCK
IC400 LA7134M
VIDEO IC
VIDEO DEMODULATOR
Q411 :
RF BUFFER
Q475 :
VIDEO BUFFER
CN703
B3B-PH-K-S
GND
2fsc
CSYNC
CN201
JA14
VKB1091
AC-3
OUT
VIDEO
OUT
[CONT BUS]
[SERVO BUS]
RF (VIDEO)

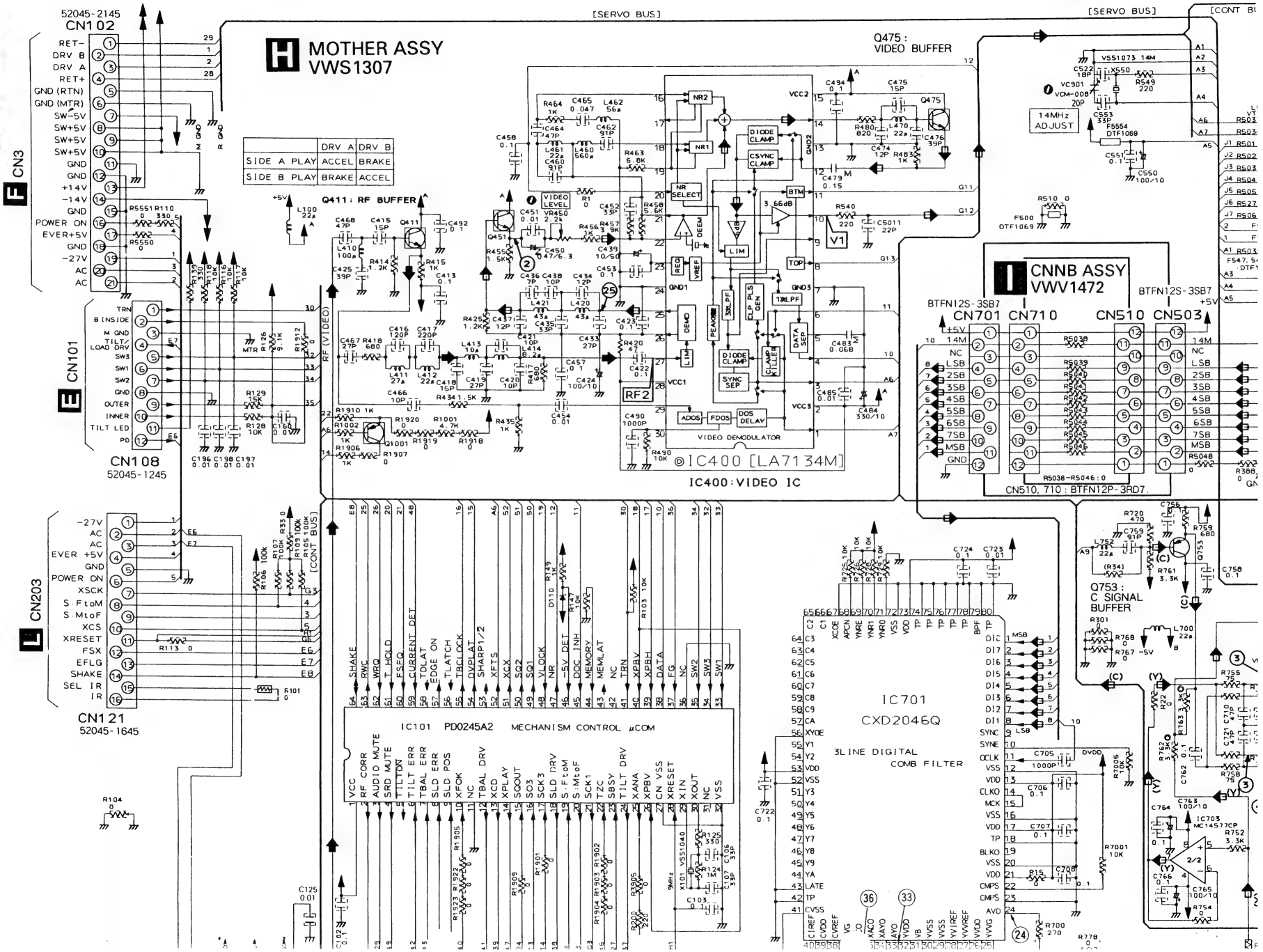
3.5 MOTHER AND CNNB ASSEMBLIES [DX-V350(B)]

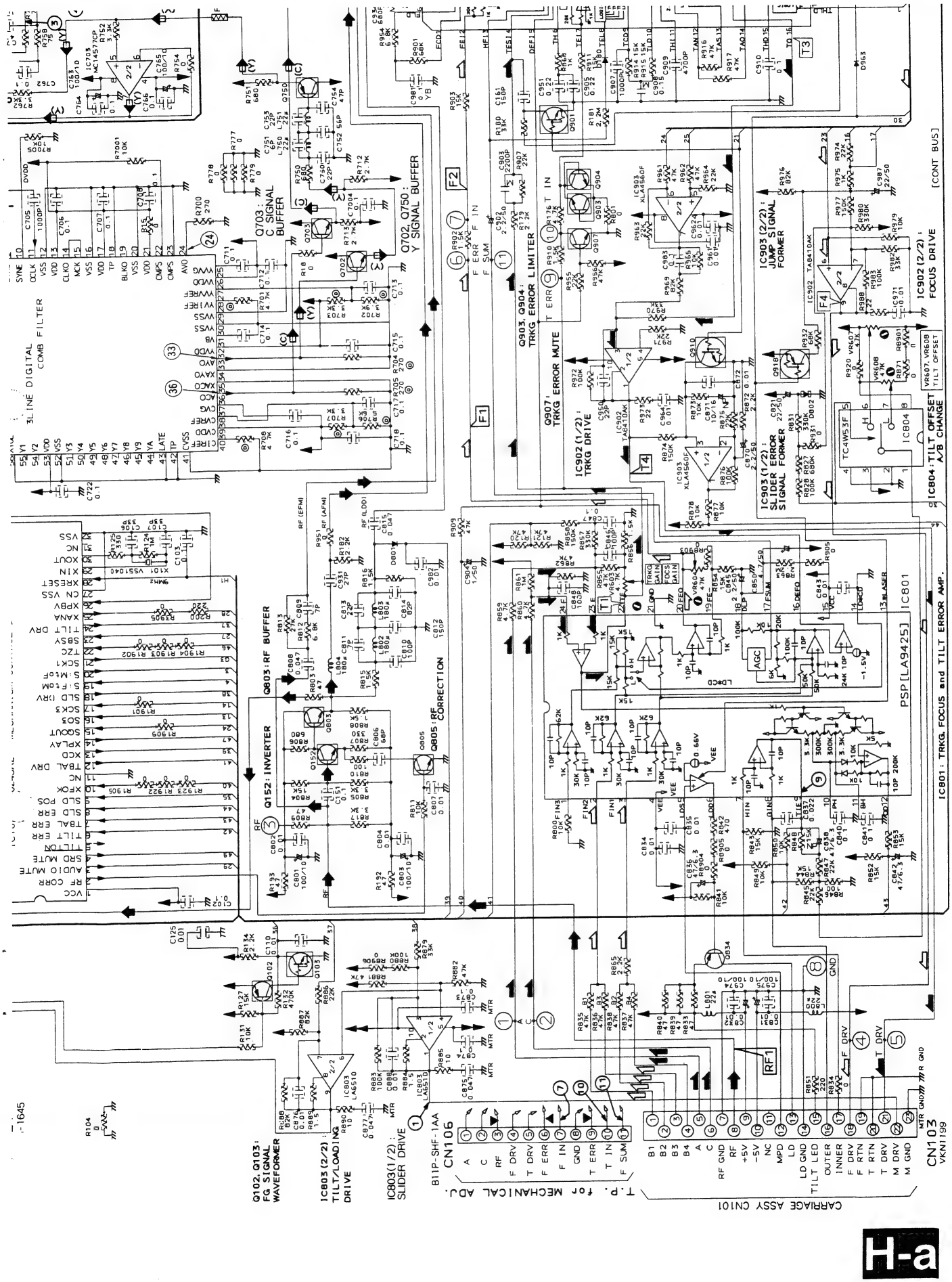
H-a

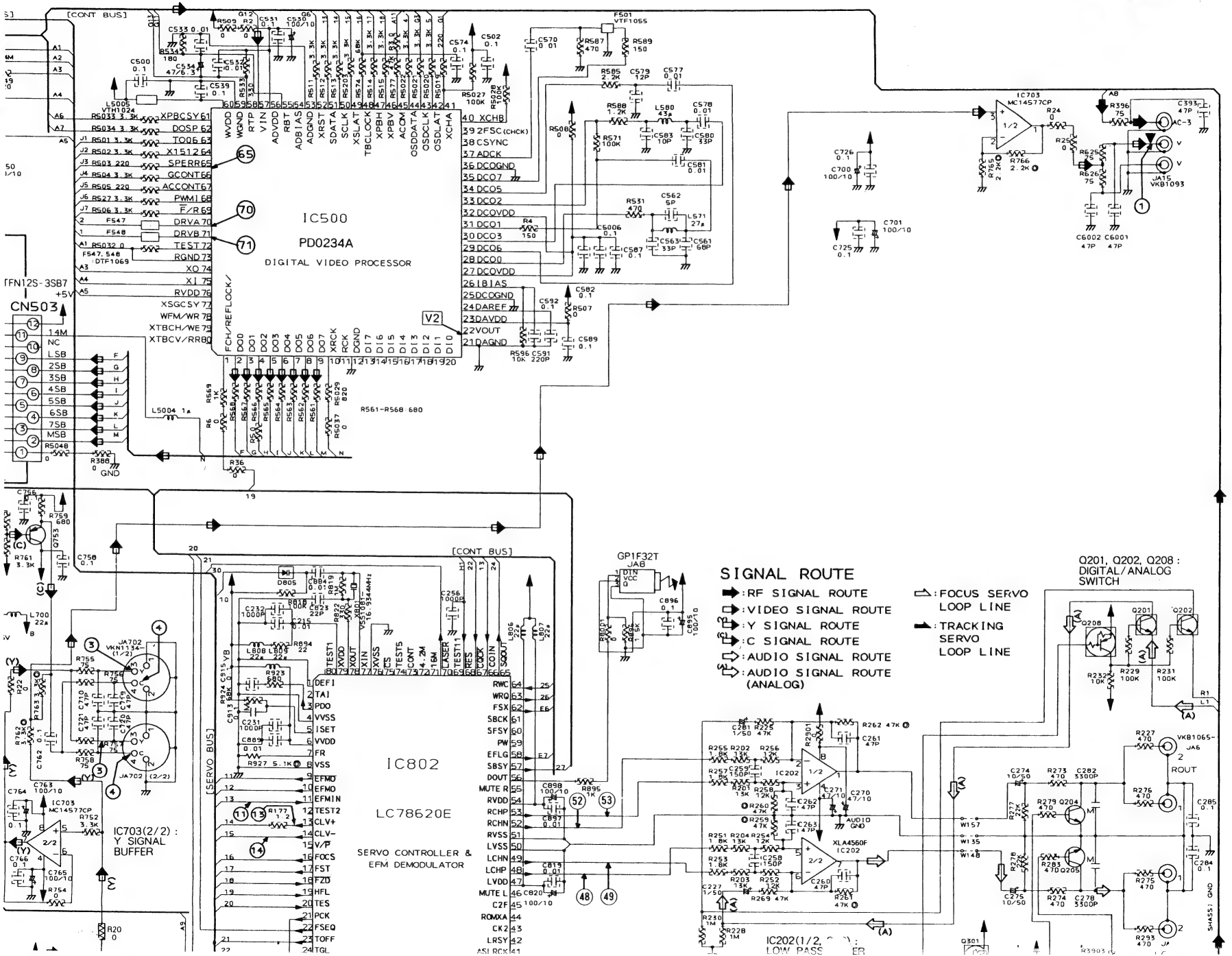


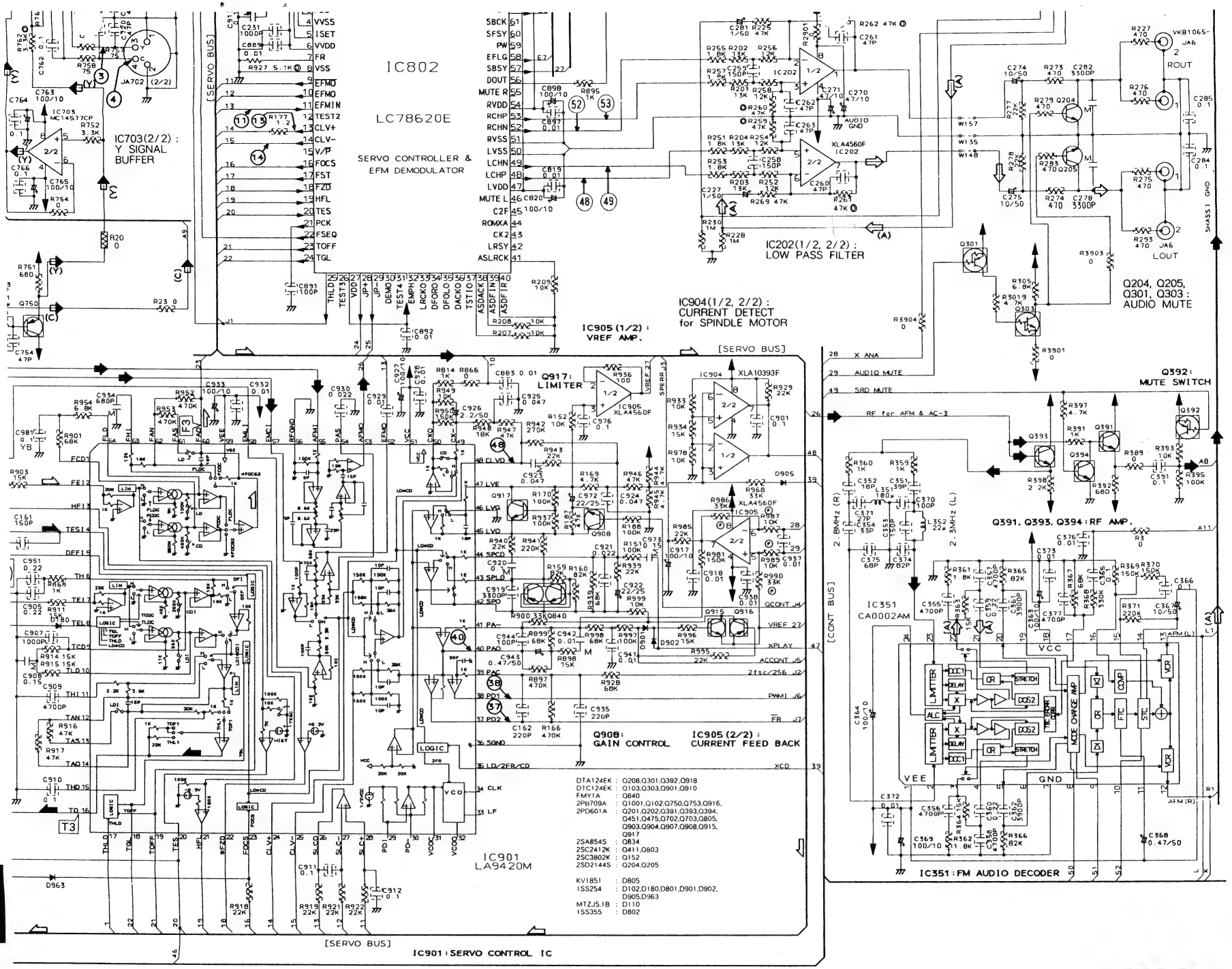
H I


IC500
PD0234A
DIGITAL VIDEO PROCESSOR
IC802
LC78620E
SERVO CONTROLLER & EFM DEMODULATOR
IC901
LA9420M
SIGNAL ROUTE
RF SIGNAL ROUTE
VIDEO SIGNAL ROUTE
Y SIGNAL ROUTE
C SIGNAL ROUTE
AUDIO SIGNAL ROUTE
AUDIO SIGNAL ROUTE (ANALOG)
FOCUS SERVO LOOP LINE
TRACKING SERVO LOOP LINE
Q201, Q202, Q208 : DIGITAL/ ANALOG SWITCH
IC202(1/2, 2/2) : LOW PASS FILTER
Q204, Q205, Q301, Q303 : AUDIO MUTE
Q392 : MUTE SWITCH
IC703(2/2) : Y SIGNAL BUFFER
IC904(1/2, 2/2) : CURRENT DETECT for SPINDLE MOTOR
IC905(1/2) : VREF AMP.
Q917 : LIMITER
Q908 : GAIN CONTROL
IC905(2/2) : CURRENT FEED BACK
Q391, Q393, Q394 : RF AMP.
IC351 : CA0002AM
IC351 : FM AUDIO DECODER
IC901 : SERVO CONTROL IC
[CONT BUS]
[SERVO BUS]
GND
VCC
VEE

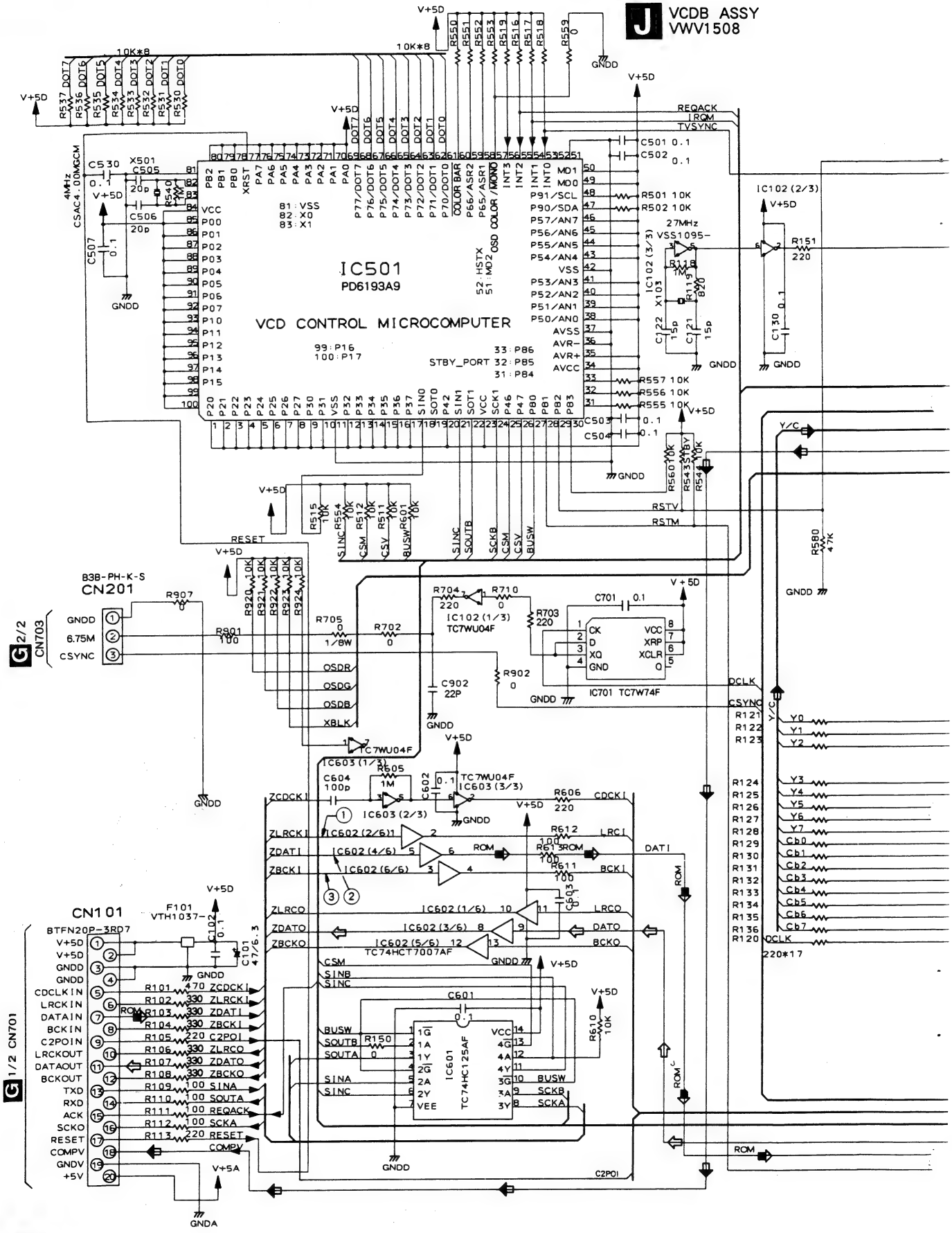

H MOTHER ASSY
VWS1307
I CNNB ASSY
VWV1472
F CN3
E CN101
L CN203
CN102
52045-2145
CN108
52045-1245
CN121
52045-1645
[SERVO BUS]
[CONT BUS]
Q475 :
VIDEO BUFFER
Q411 : RF BUFFER
Q753 :
C SIGNAL
BUFFER
IC400 [LA7134M]
IC400 : VIDEO IC
VIDEO DEMODULATOR
IC101 PD0245A2 MECHANISM CONTROL μCOM
IC701
CXD2046Q
3LINE DIGITAL
COMB FILTER
IC703
MC14577CP
CN701 CN710
CN510 CN503
BTFN12S-3SB7
CN510, 710 : BTFN12P-3RD7.
R5038-R5046 : 0
14MHz
ADJUST
VSS1073 14M
X550
DTF1069
SIDE A PLAY
SIDE B PLAY
DRV A
DRV B
ACCEL
BRAKE

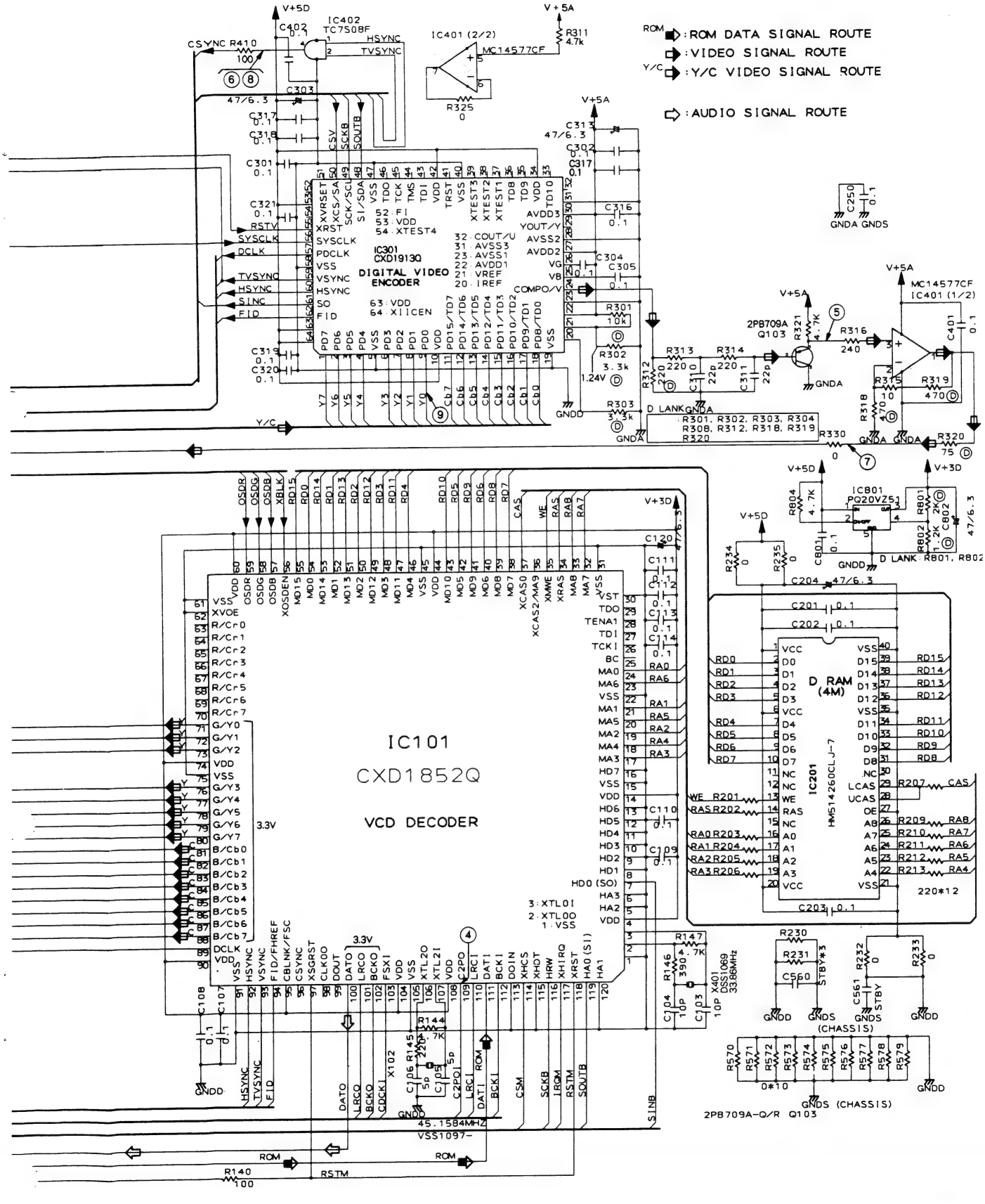

H-a
H-b
3LINE DIGITAL COMB FILTER
Q703 : C SIGNAL BUFFER
Q702, Q750 : Y SIGNAL BUFFER
Q903, Q904 : TRKG ERROR LIMITER
Q907 : TRKG ERROR MUTE
IC902 (1/2) : TRKG DRIVE
IC903 (1/2) : SLIDER ERROR SIGNAL FORMER
IC903 (2/2) : JUMP SIGNAL FORMER
IC902 (2/2) : FOCUS DRIVE
IC804 : TILT OFFSET A/B CHANGE
[CONT BUS]
Q803 : RF BUFFER
Q152 : INVERTER
Q805 : RF CORRECTION
PSP[LA9425] IC801
IC801 : TRKG, FOCUS and TILT ERROR AMP.
Q102, Q103 : FG SIGNAL WAVEFORMER
IC803 (2/2) : TILT/LOADING DRIVE
IC803(1/2) : SLIDER DRIVE
B11P-SHF-1AA CN106
T.P. for MECHANICAL ADJ.
CARRIAGE ASSY CN101
CN103
H-a
25


IC500
PD0234A
DIGITAL VIDEO PROCESSOR
IC802
LC78620E
SERVO CONTROLLER & EFM DEMODULATOR
IC703(2/2) : Y SIGNAL BUFFER
IC202(1/2,) : LOW PASS ER
CN503
GP1F32T JA8
SIGNAL ROUTE
:RF SIGNAL ROUTE
:VIDEO SIGNAL ROUTE
:Y SIGNAL ROUTE
:C SIGNAL ROUTE
:AUDIO SIGNAL ROUTE
:AUDIO SIGNAL ROUTE (ANALOG)
:FOCUS SERVO LOOP LINE
:TRACKING SERVO LOOP LINE
Q201, Q202, Q208 : DIGITAL/ANALOG SWITCH
[CONT BUS]
[SERVO BUS]

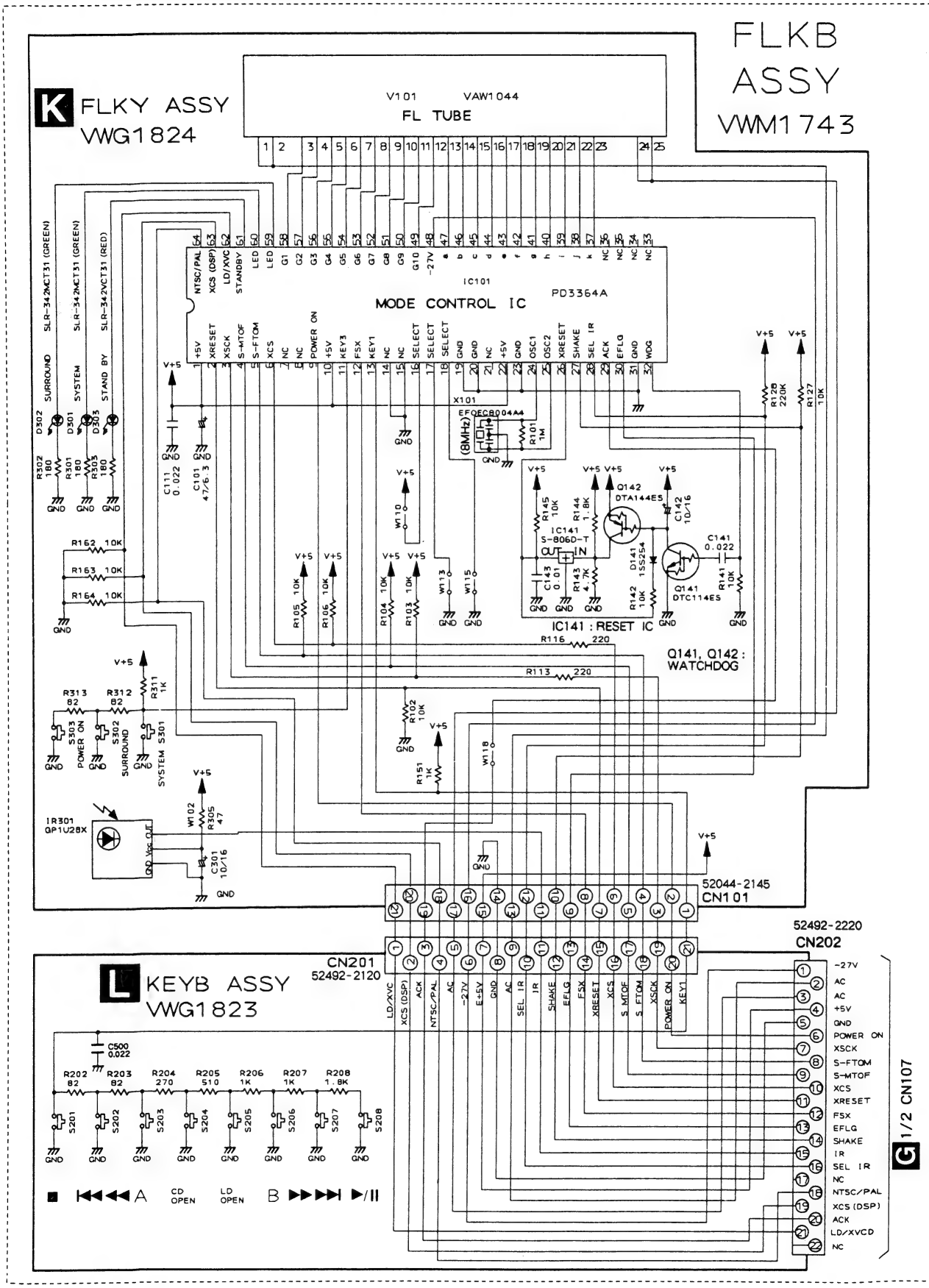

IC802
LC78620E
SERVO CONTROLLER & EFM DEMODULATOR
IC703(2/2) : Y SIGNAL BUFFER
IC202(1/2, 2/2) : LOW PASS FILTER
IC904(1/2, 2/2) : CURRENT DETECT for SPINDLE MOTOR
IC905 (1/2) : VREF AMP.
Q204, Q205, Q301, Q303 : AUDIO MUTE
Q392 : MUTE SWITCH
Q391, Q393, Q394 : RF AMP.
Q917 : LIMITER
Q908 : GAIN CONTROL
IC905 (2/2) : CURRENT FEED BACK
IC901 LA9420M
IC901 : SERVO CONTROL IC
IC351 CA0002AM
IC351 : FM AUDIO DECODER
[SERVO BUS]
[CONT BUS]
DTA124EK : Q208,Q301,Q392,Q918
DTC124EK : Q103,Q303,Q901,Q910
FMY1A : Q840
2PB709A : Q1001,Q102,Q750,Q753,Q916,
2PD601A : Q201,Q202,Q391,Q393,Q394,
Q451,Q475,Q702,Q703,Q805,
Q903,Q904,Q907,Q908,Q915,
Q917
2SA854S : Q834
2SC2412K : Q411,Q803
2SC3802K : Q152
2SD2144S : Q204,Q205
KV1851 : D805
1SS254 : D102,D180,D801,D901,D902,
D905,D963
MTZJ5.1B : D110
1SS355 : D802

3.6 VCDB ASSY [DX-V370(B), (G) ONLY]




ROM :ROM DATA SIGNAL ROUTE
:VIDEO SIGNAL ROUTE
Y/C :Y/C VIDEO SIGNAL ROUTE
:AUDIO SIGNAL ROUTE
IC101
CXD1852Q
VCD DECODER
IC301
CXD1913Q
DIGITAL VIDEO ENCODER
IC402
TC7S08F
IC401 (2/2)
MC14577CF
IC401 (1/2)
IC801
PQ20VZ51
IC201
HM514260CLJ-7
D RAM (4M)
2PB709A Q103
45.1584MHz
3.3V
V+5D
V+5A
V+3D
GNDD
GNDA
GNDS (CHASSIS)

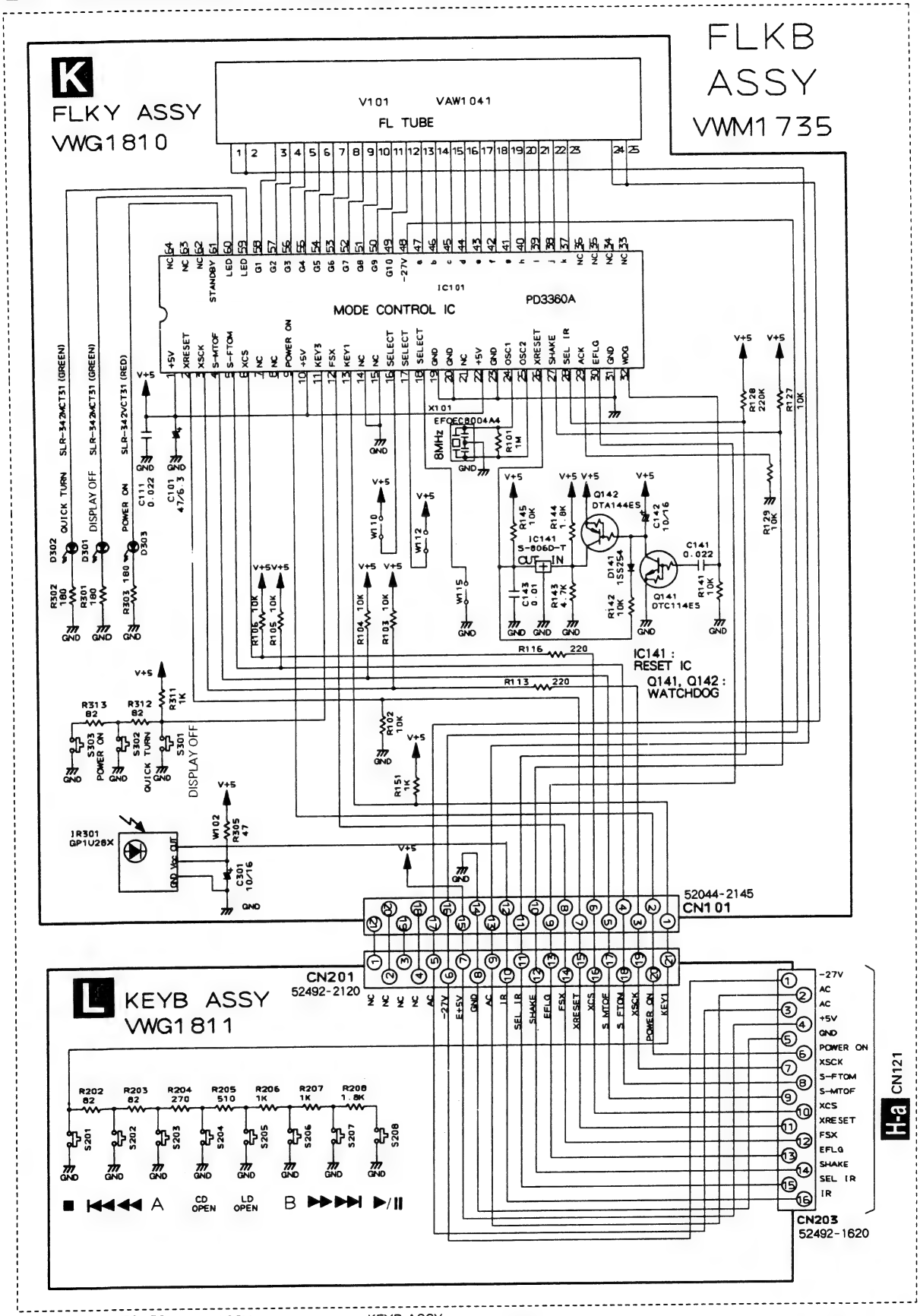
3.7 FLKY AND KEYB ASSEMBLIES [DX-V370(B), (G)]



SWITCHES : FLKY ASSY
- S301 : VIDEO CD SYSTEM
- S302 : SURROUND
- S303 : POWER

KEYB ASSY
- S201 : STOP/RETURN (■)
- S202 : REV (|◀◀◀◀)
- S203 : DISC SIDE (A)
- S204 : CD OPEN/CLOSE
- S205 : LD OPEN/CLOSE
- S206 : DISC SIDE (B)
- S207 : FWD (▶▶▶▶|)
- S208 : PLAY/PAUSE (▶/II)

3.8 FLKY AND KEYB ASSEMBLIES [DX-V350(B)]



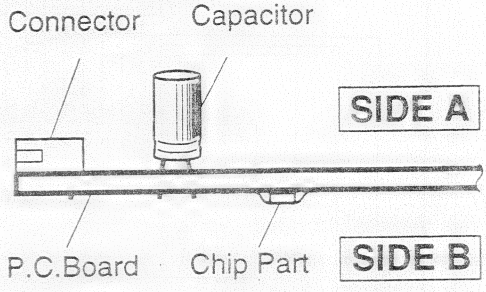
4. PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS :

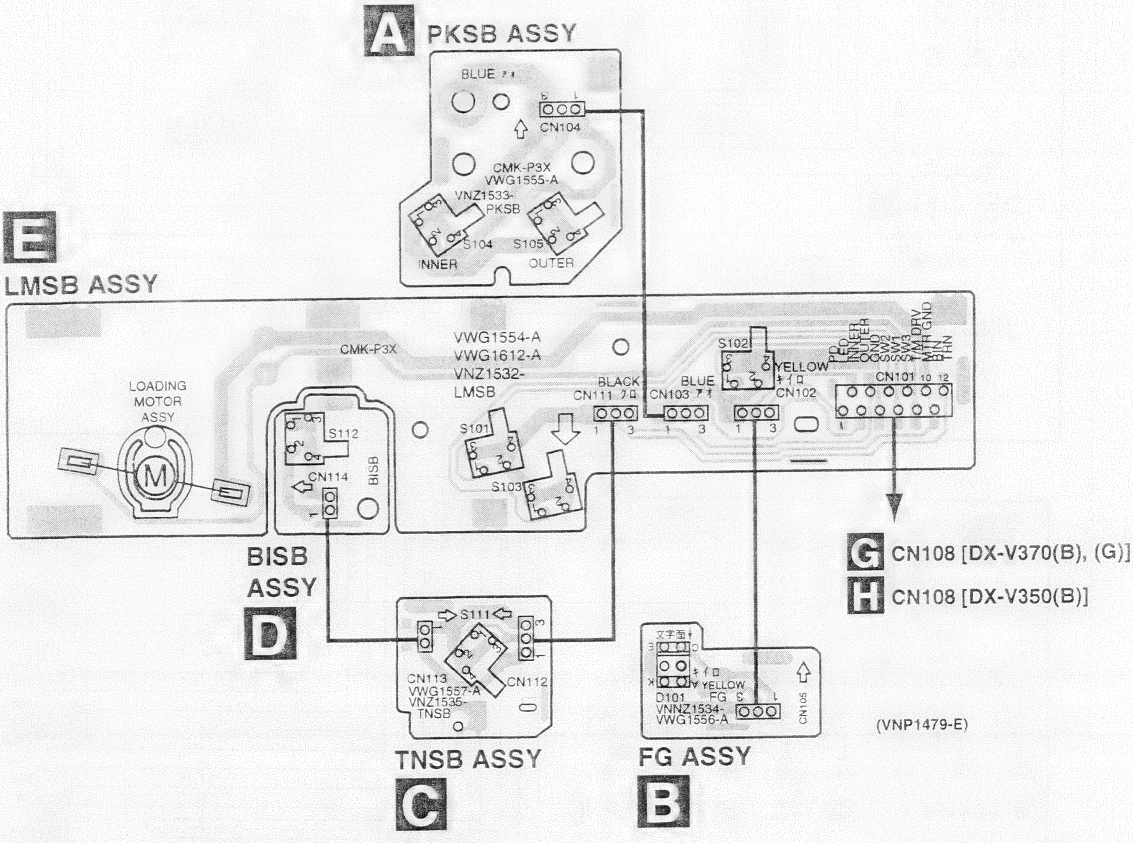
1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3-terminal regulator

3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.



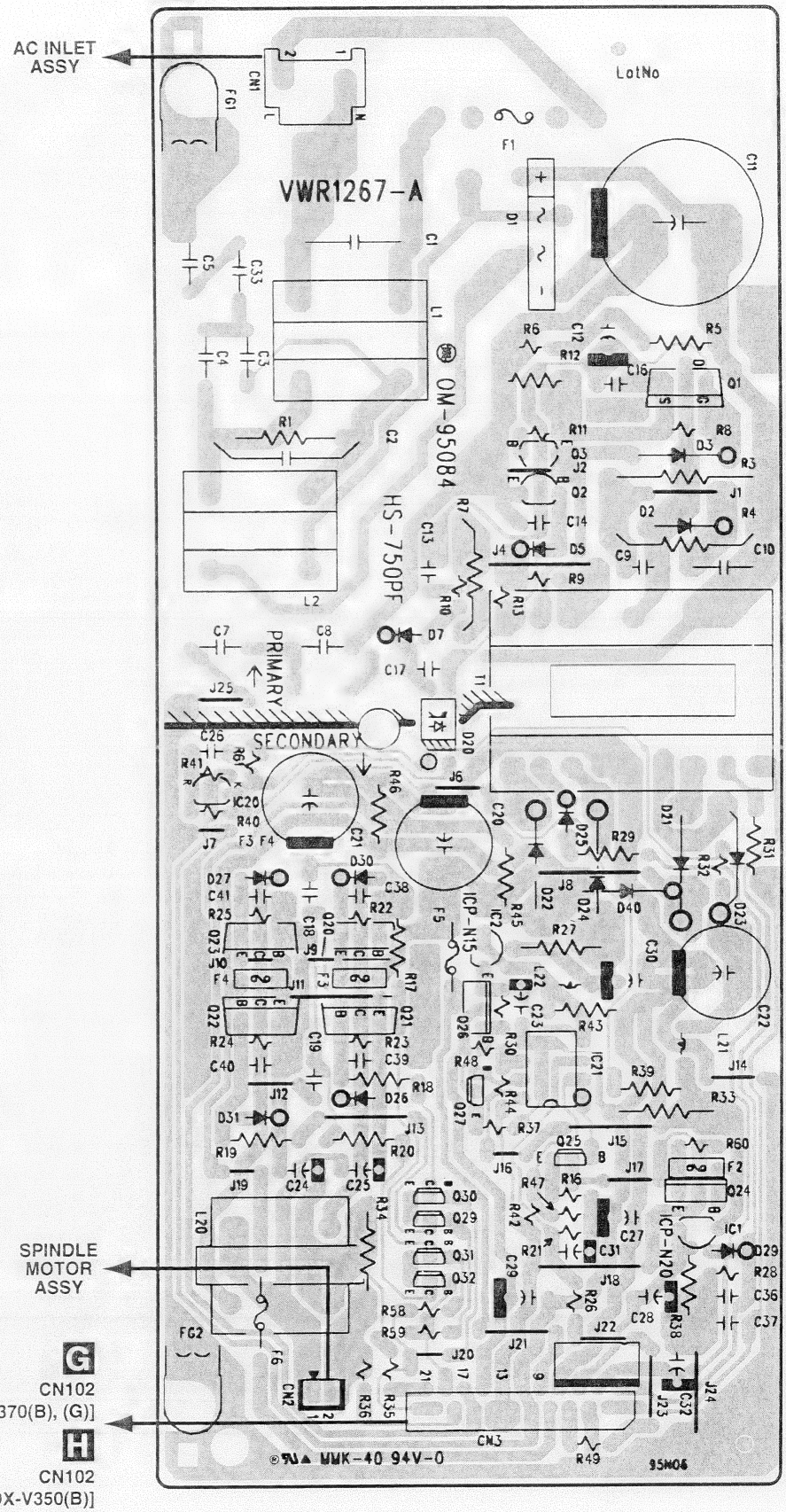
4.1 PKSB, FG, TNSB, BISB AND LMSB ASSEMBLIES



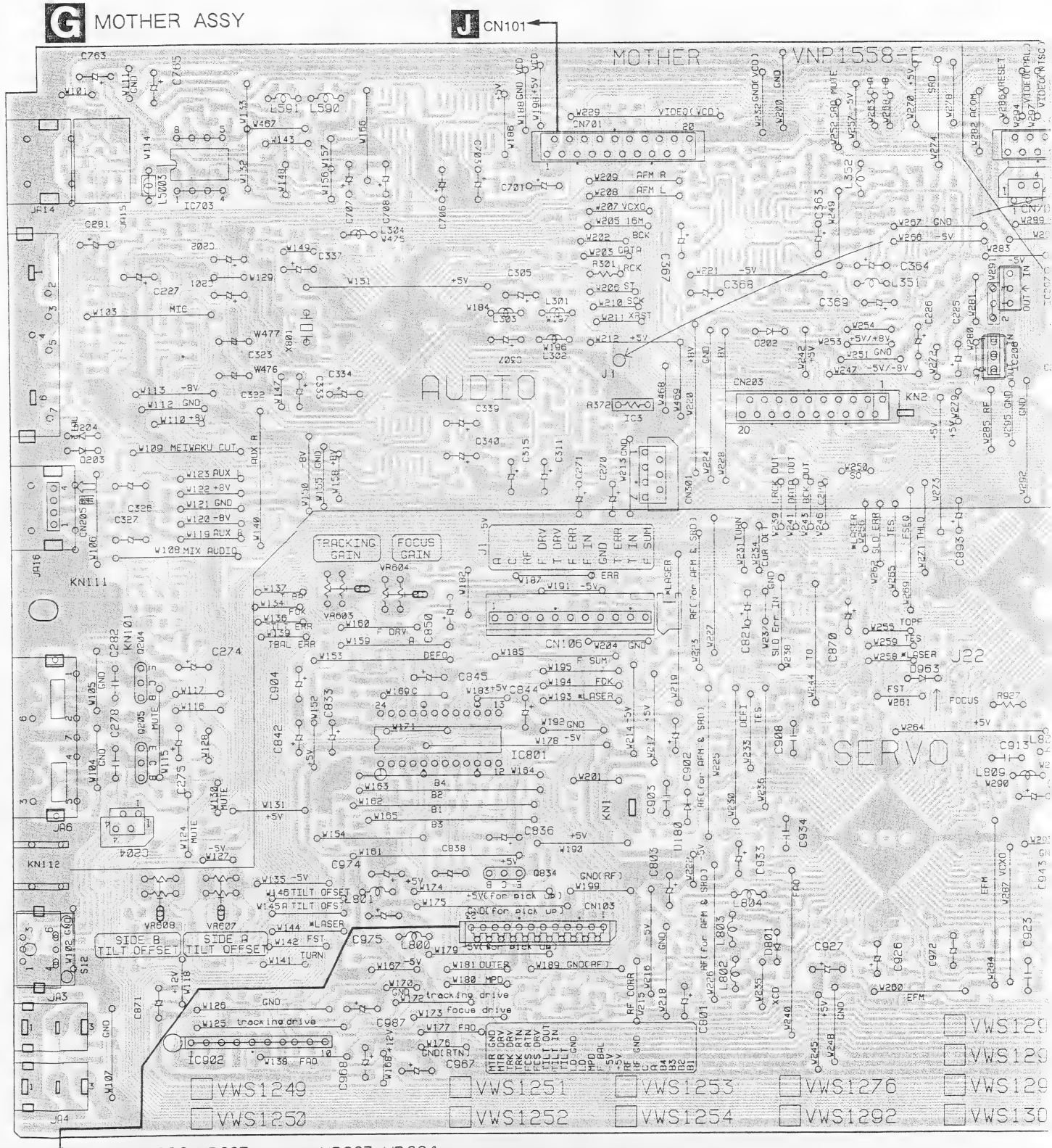
A B C D E

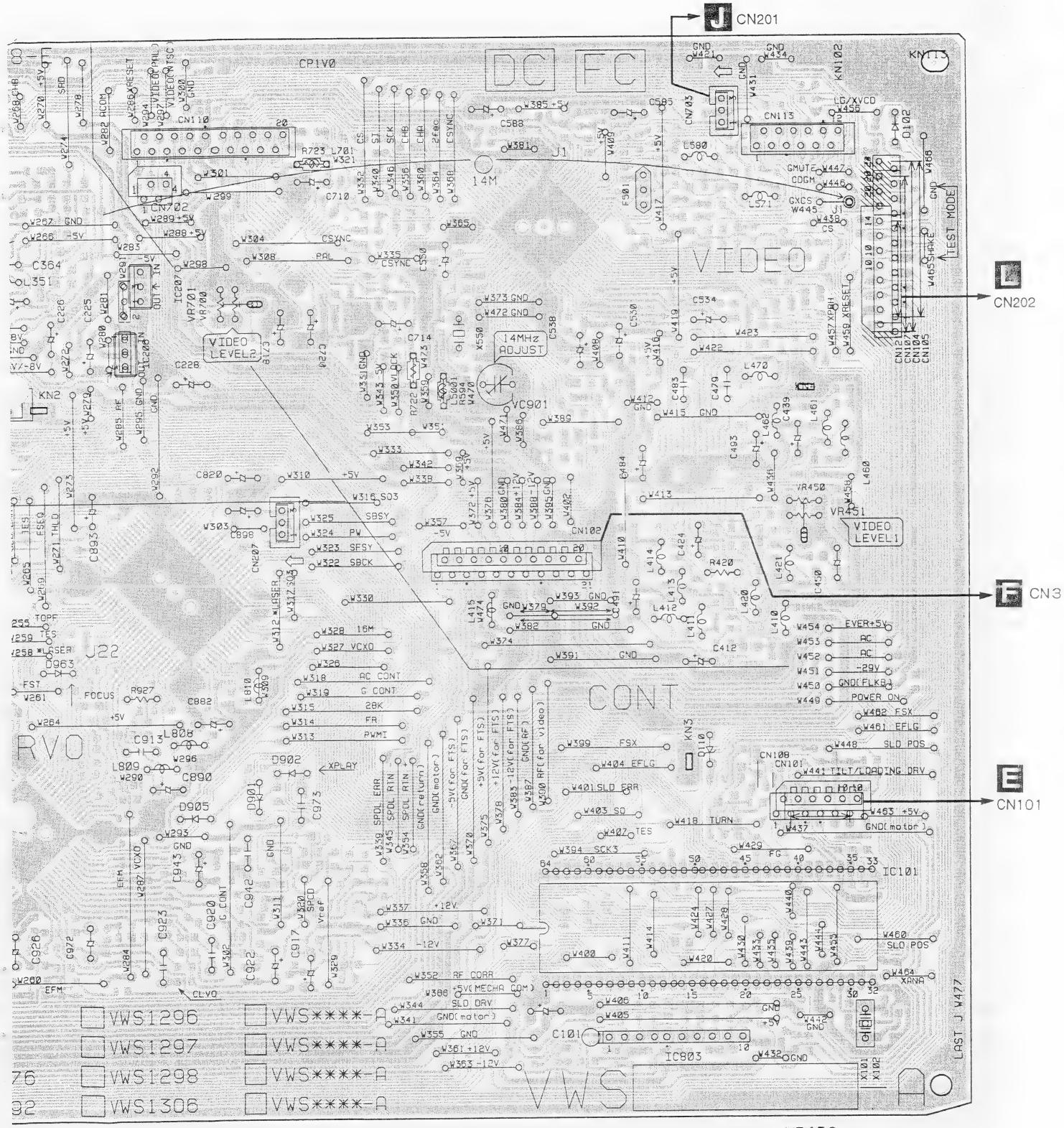
4.2 POWER SUPPLY ASSY

F POWER SUPPLY ASSY

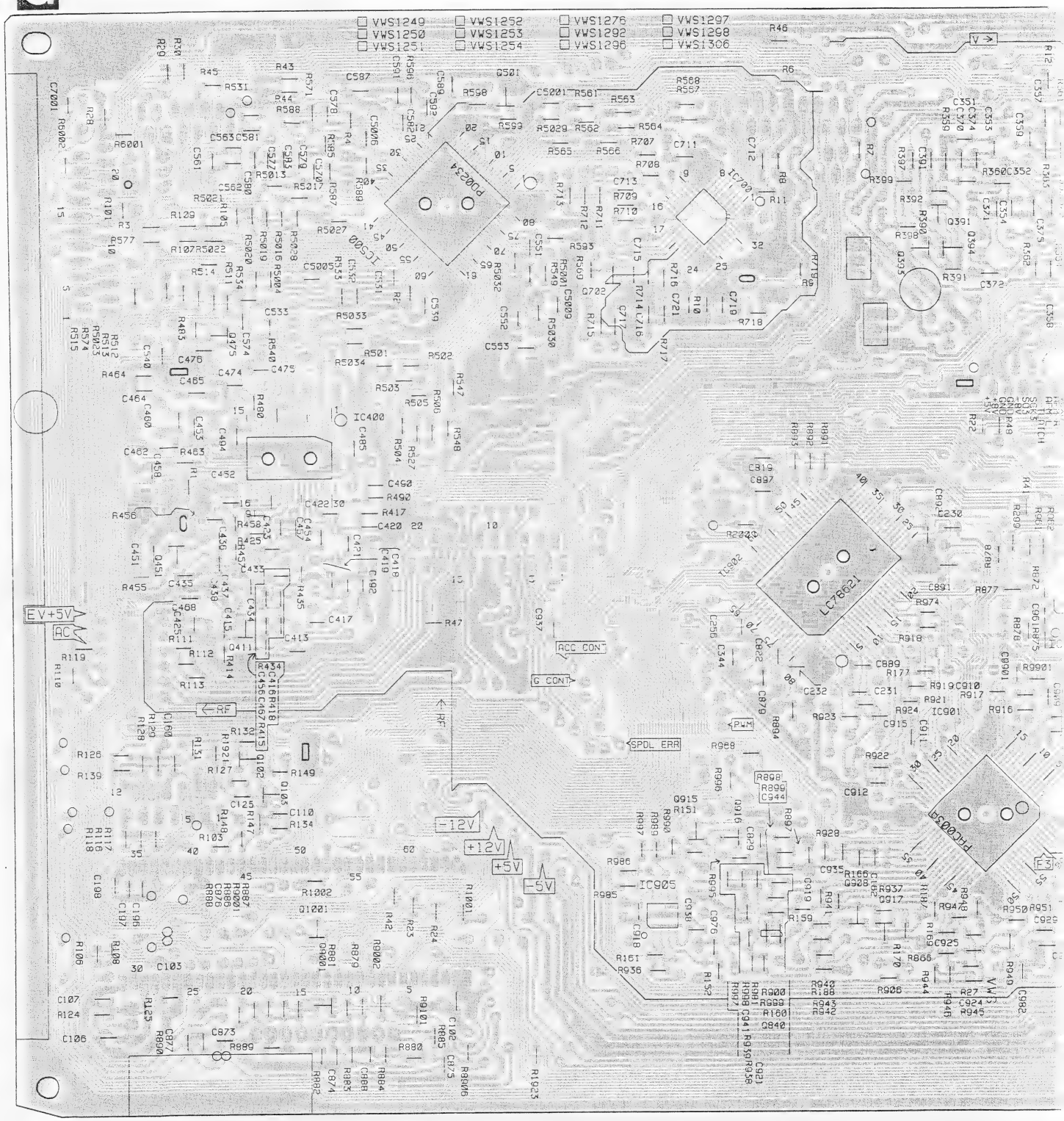


4.3 MOTHER ASSY [DX-V370(B),(G)]



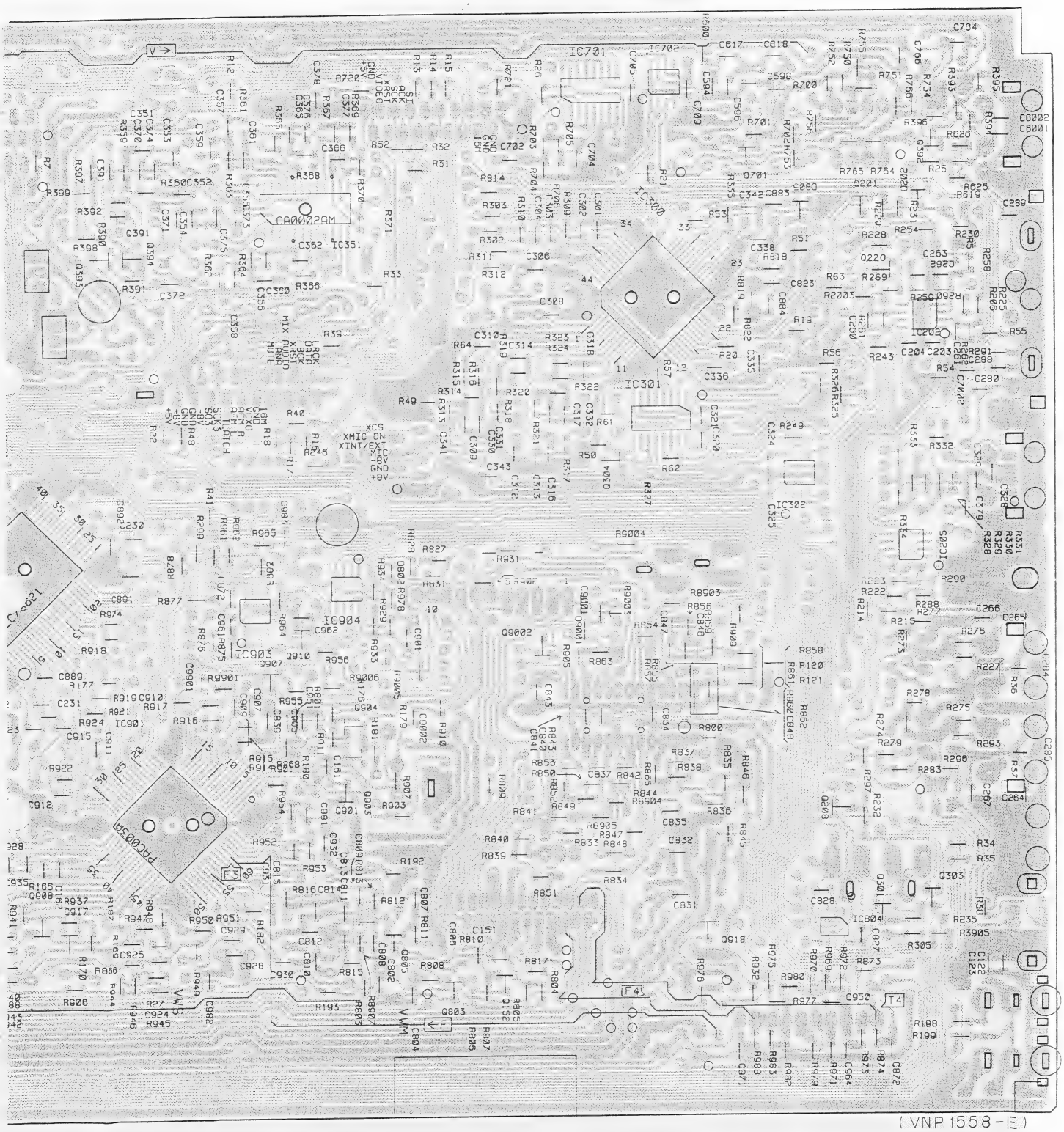

J CN201
L CN202
E CN3
E CN101
VR701
VC901
VR450
IC207
IC206
IC101
IC803
VWS1296
VWS1297
VWS1298
VWS1306
VWS****-D
VWS****-A
VIDEO
CONT
RVO
VWS
14MHz ADJUST
VIDEO LEVEL2
VIDEO LEVEL1
TEST MODE
LAST J W477

G MOTHER ASSY



Q451 Q475 IC400 IC500 Q501 Q702 IC700 IC802 Q393 Q391 Q394
Q411 Q102 Q103 IC905 Q915 Q916 Q840 Q908 Q917 IC901
Q1001 Q9001

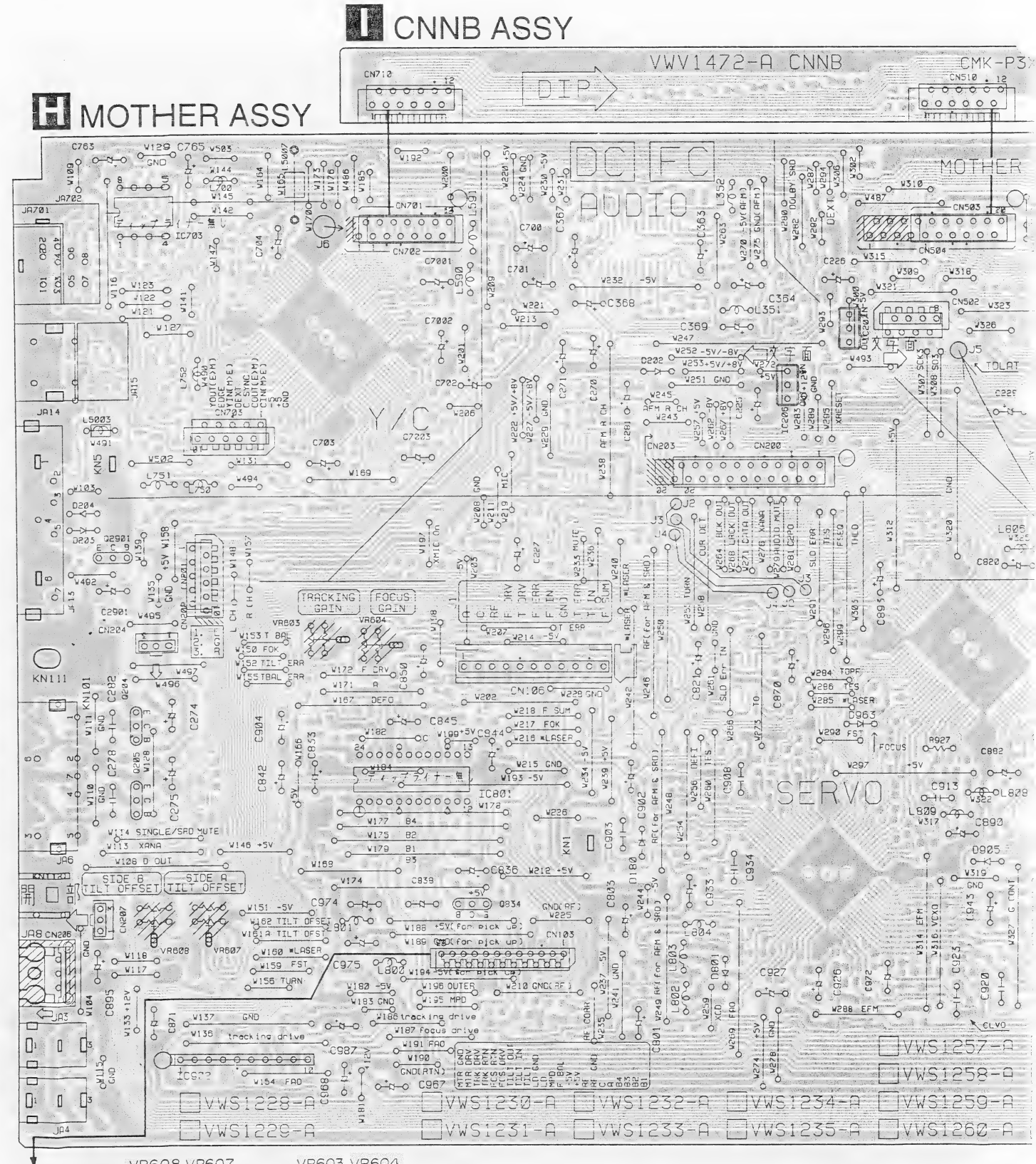
SIDE B

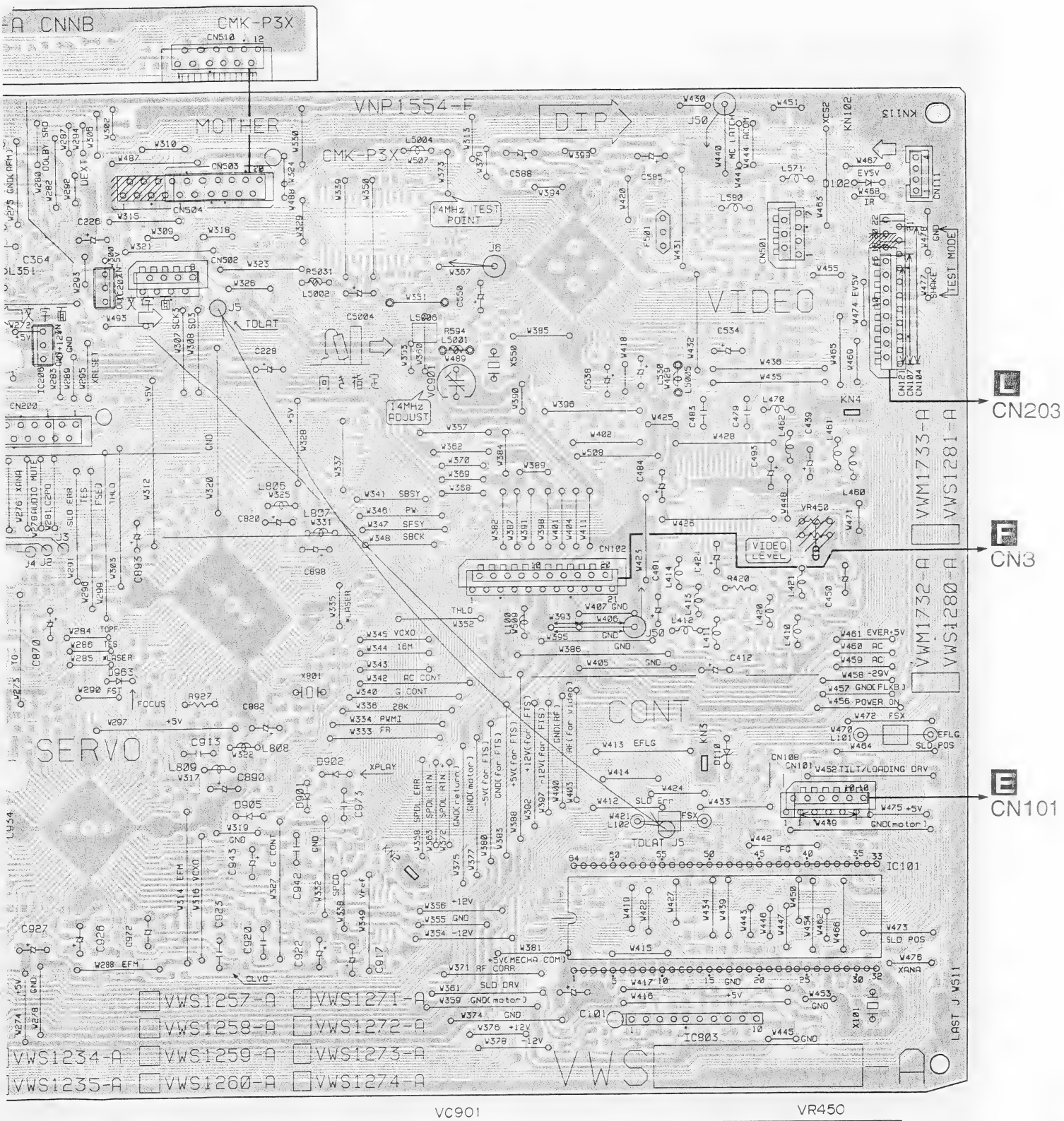


(VNP1558-E)

Q393 Q391 Q394 IC351 IC701 IC702 Q701 Q201 Q202 Q392
)08 Q917 IC901 IC903 Q910 IC904 Q904 Q9002 IC300 IC302 Q208 Q220 IC202
Q907 Q901 Q903 Q805 Q803 Q152 Q304 IC301 Q918 IC804 Q301 IC205 Q303

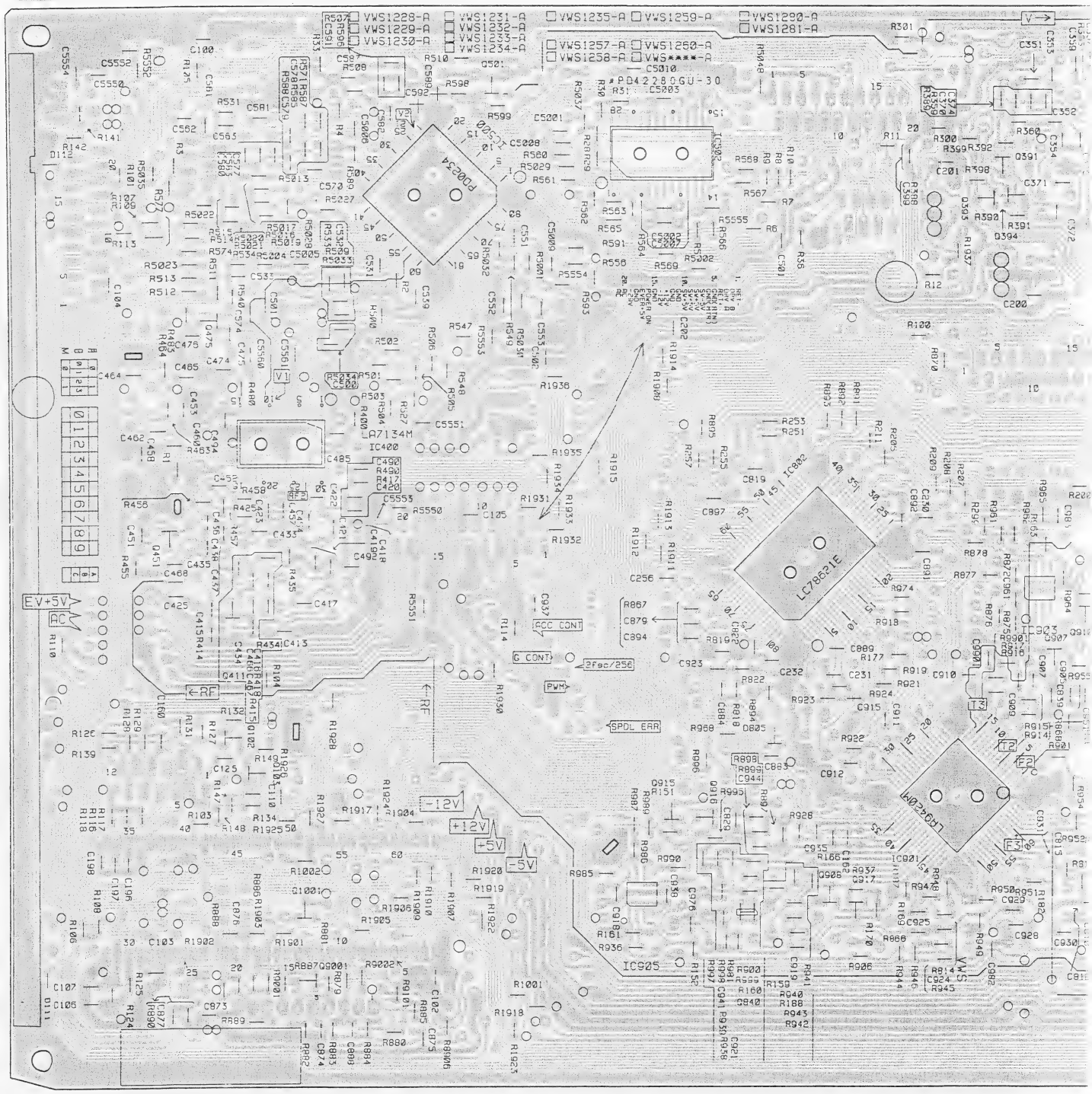
4.4 MOTHER AND CNNB ASSEMBLIES [DX-V350(B)]




CMK-P3X
CN510
VNP1554-F
MOTHER
CMK-P3X
DIP
VIDEO
CONT
SERVO
14MHz TEST POINT
14MHz ADJUST
TDLAT
VIDEO LEVEL
VWM1733-A
VWS1281-A
VWM1732-A
VWS1280-A
L
CN203
F
CN3
E
CN101
VWS1257-A
VWS1258-A
VWS1234-A
VWS1235-A
VWS1271-A
VWS1272-A
VWS1273-A
VWS1274-A
VWS1259-A
VWS1260-A
VC901
VR450
IC206
IC207
IC803
IC101
LAST J W511

I CNNB ASSY

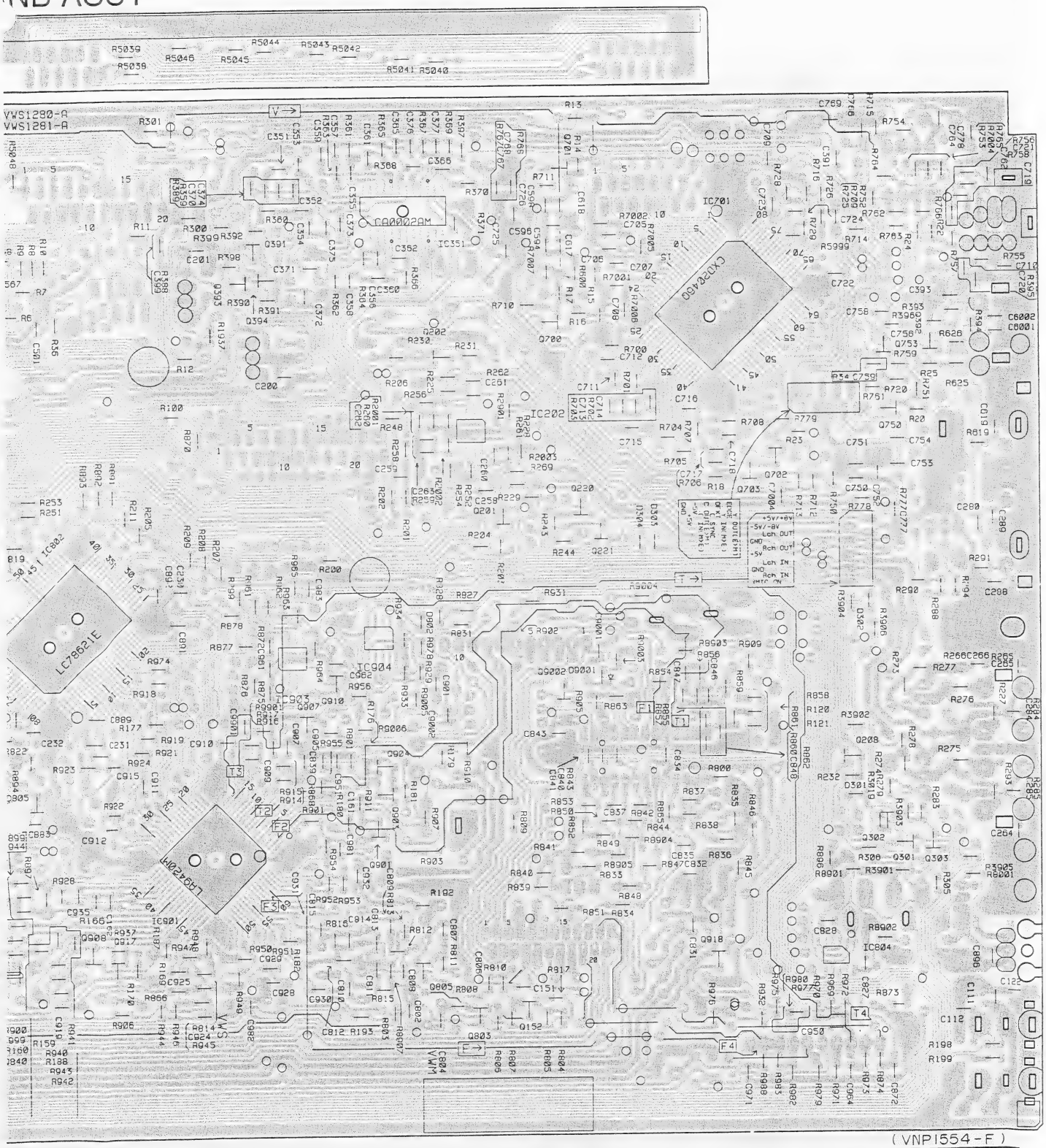
H MOTHER ASSY



Q451 Q475 Q411 IC400 IC500 Q501 IC502 IC802 Q393 Q394 Q391
Q102 Q103 Q1001 IC905 Q915 Q916 Q840 Q908 Q917 IC901 IC903
Q9001 Q90

SIDE B

INB ASSY



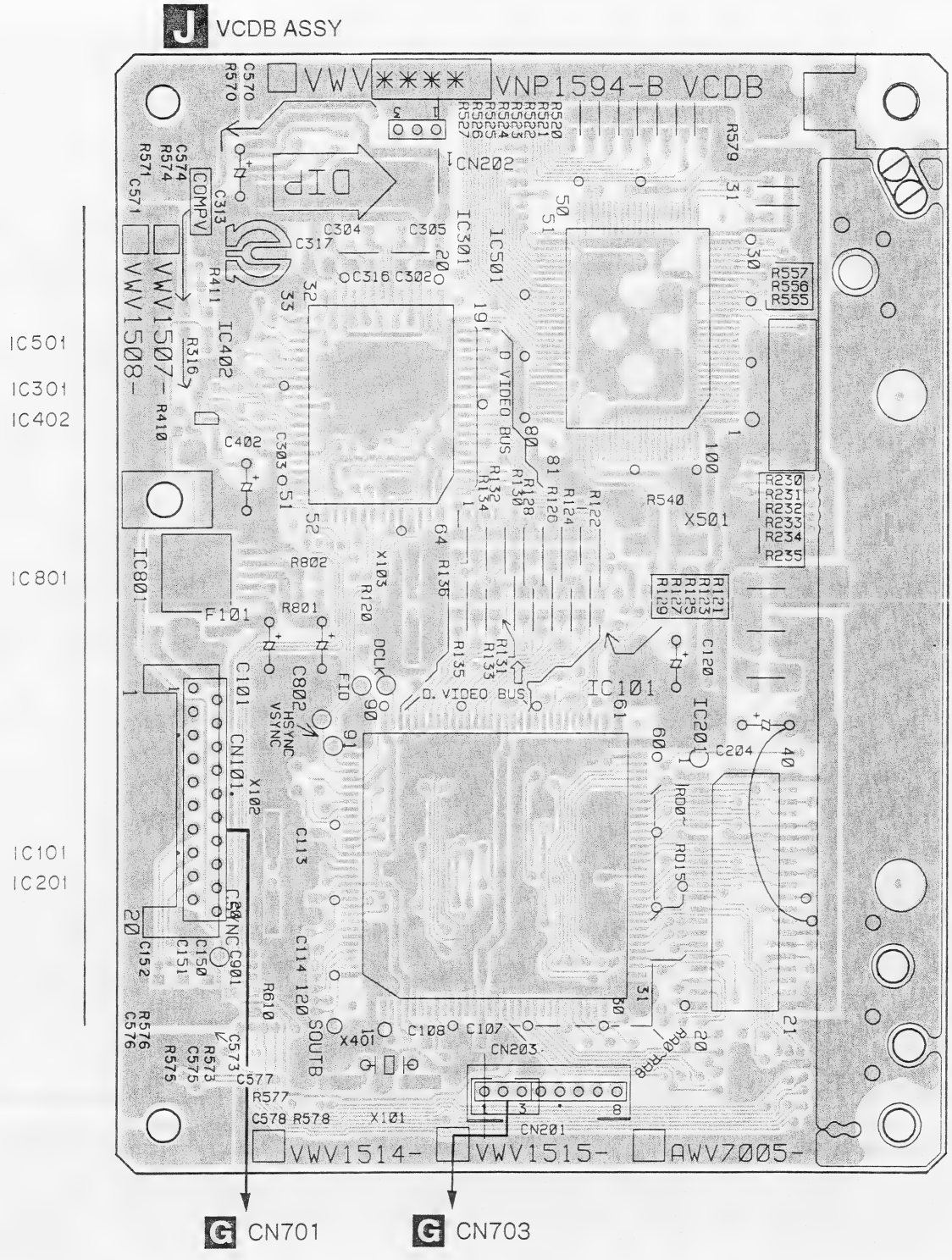
(VNP1554-F)

IC802
840 Q908 Q917

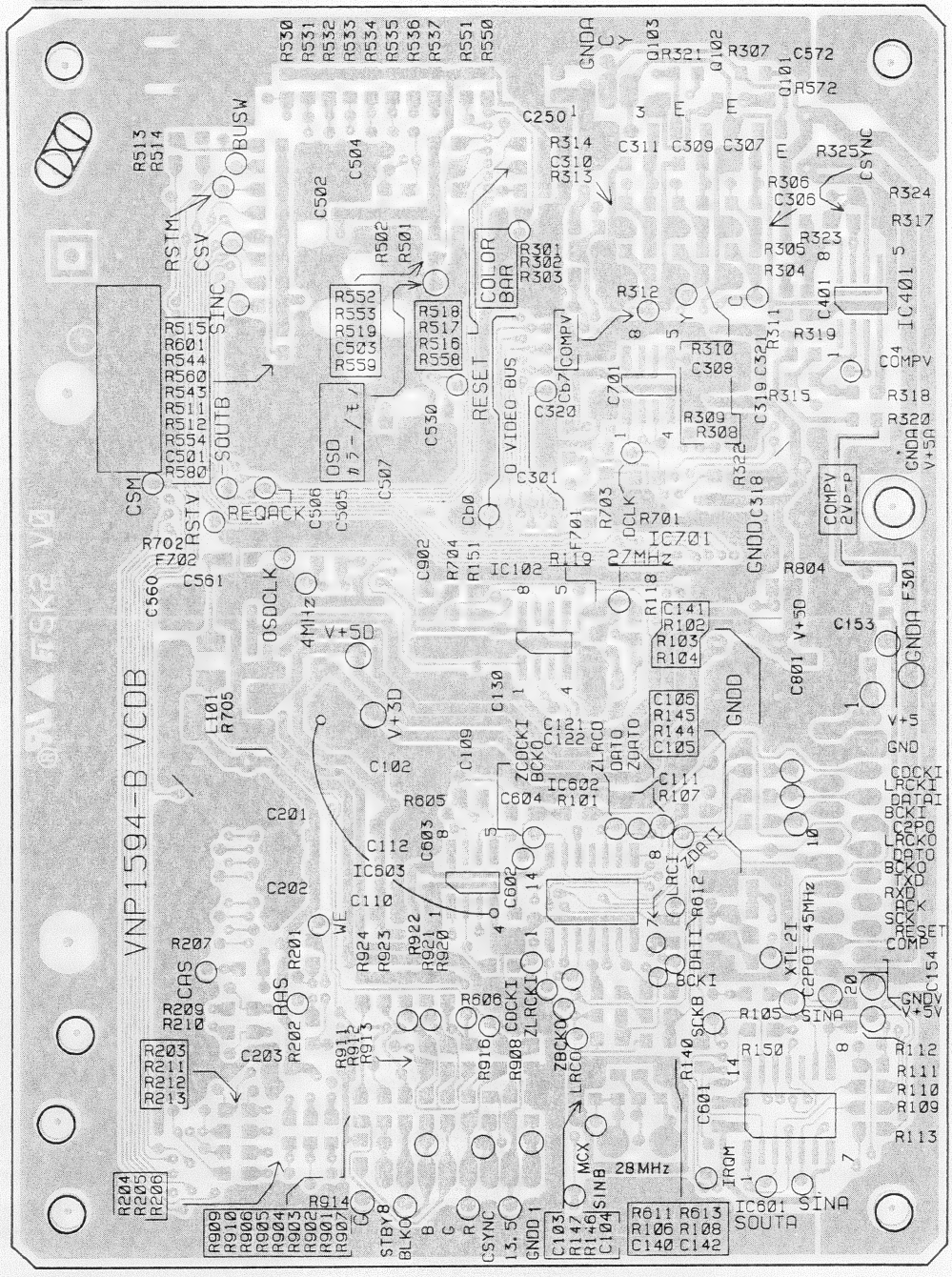
Q393 Q394 Q391 IC351 Q202 IC202 Q700 Q701
IC901 IC903 Q910 IC904 Q904 Q201 Q9002 Q220
Q907 Q901 Q903 Q805 Q803 Q152 Q221

IC701 Q703 Q702 Q753 Q392
Q208 Q750
Q918 IC804 Q301-Q303

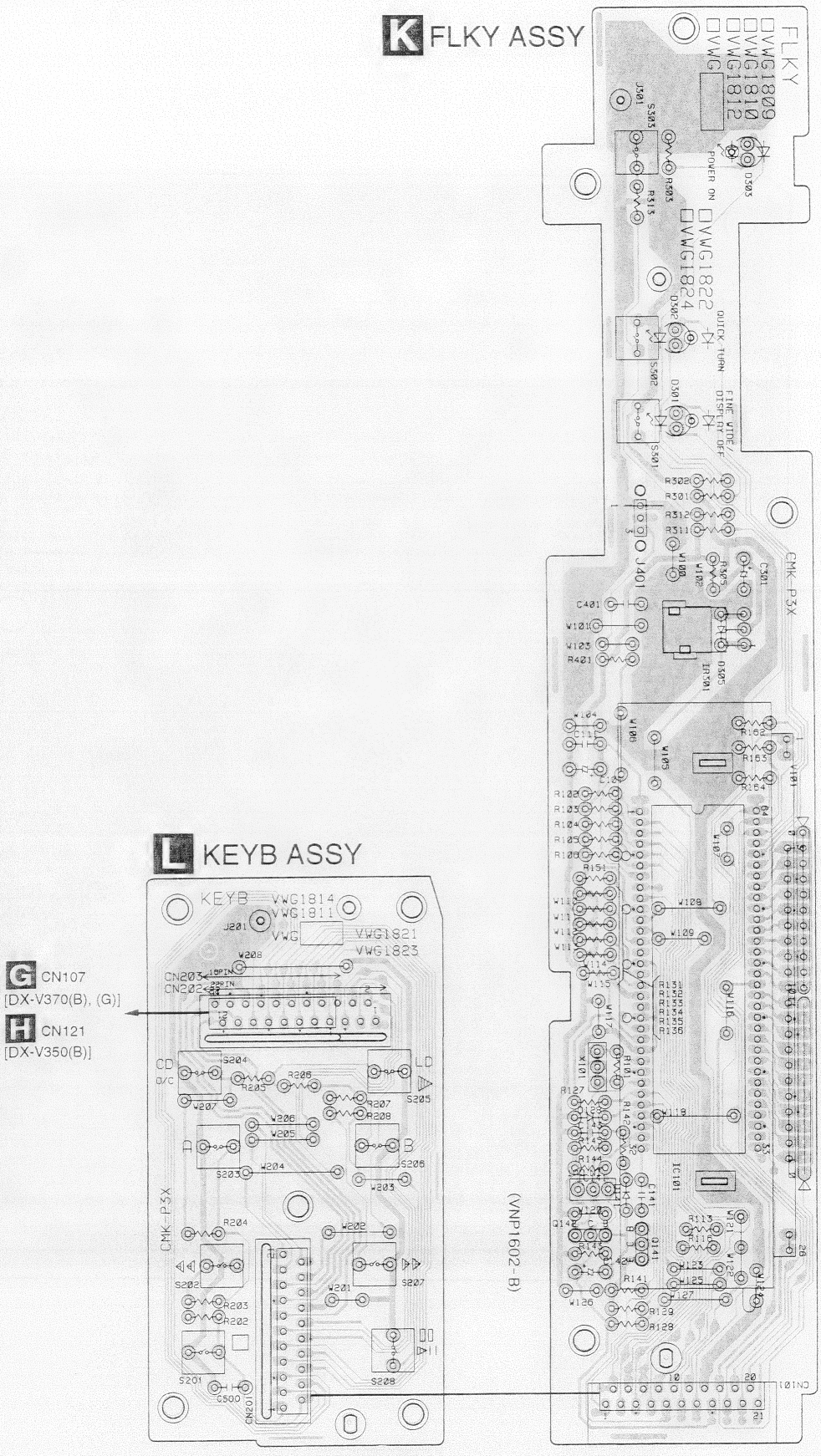
4.5 VCDB ASSY [DX-V370(B),(G) ONLY]



J VCDB ASSY


VNP1594-B VCDB
Q101 – Q103
IC401
IC701
IC102
IC603
IC602
IC601
SIDE B

4.6 FLKY AND KEYB ASSEMBLIES



SIDE A

WAVEFORMS AND VOLTAGE

■ MOTHER ASSY

Note : (No.) in the table correspond to the pin number.

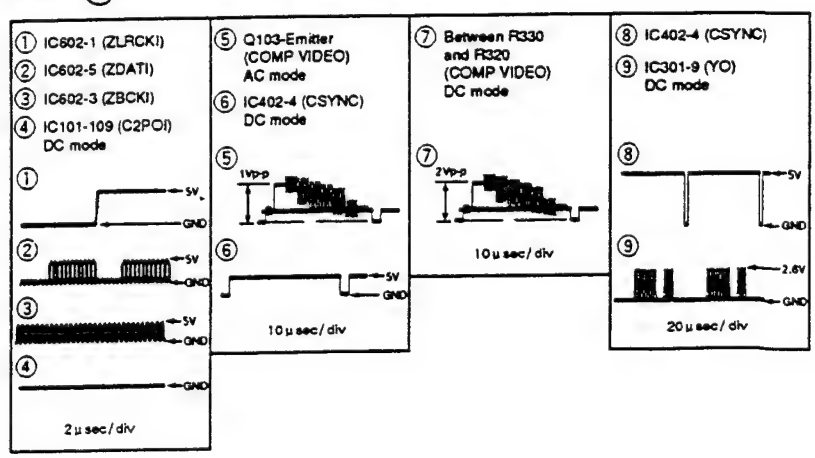
Measurement condition : In case when (D. audio) is written, at time when disc that has digital audio recording is played.

MOTHER ASSY

IC801 (LA9425)	IC901 (LA9420M)	CN106	Q451 Emitter	IC400 (LA7134M)	IC500 (PD0234A)
T1(22) 5ms/div 200mVp-p 0V DC mode	T3(16) 5ms/div 500mVp-p 0V DC mode	(7) (F2) 5ms/div 200mVp-p 0V DC mode	(2) 10μs/div 400mVp-p AC mode	V1(10) 10μs/div 1.6Vp-p 0V DC mode	V2(22) 10μs/div 1Vp-p DC mode
F1(20) 5ms/div 100mVp-p 0V DC mode	F3(60) 5ms/div 1Vp-p 0V DC mode	(10) 5ms/div 100mVp-p 0V DC mode	JA14 VIDEO OUT (1) 10μs/div 1Vp-p (75Ω termination) 0V DC mode	RF2(27) 2ms/div 400mVp-p AC mode	(65) 5ms/div 5Vp-p 0V DC mode
(9) 10ms/div 0.2Vp-p 0V DC mode	(38) 10μs/div 5Vp-p 0V (37) 0V DC mode	(11) 5ms/div 0V 0.2Vp-p DC mode		(25) 10μs/div 1Vp-p 0V DC mode	(71) 10μs/div 5Vp-p 0V (70) 0V DC mode
IC802 (LC78621E)	(40) 10ms/div 0.3Vp-p 0V DC mode	CN103			
(11) 0.5μs/div 1.6Vp-p 0V DC mode	(48) 50μs/div 1Vp-p 0V DC mode	RF1(8) 2ms/div 600mVp-p AC mode			
(13) 50μs/div 5Vp-p 0V (14) 0V DC mode					
	IC902 (TA8410AK)				
	T4(1) 5ms/div 2Vp-p 0V DC mode				
IC803 (TA8410AK)	F4(3) 5ms/div				
(1) 2ms/div 1.8Vp-p 0V DC mode	5Vp-p 0V DC mode				

■ VCDB ASSY

Note : (No.) in the table correspond to the pin number.



5. PCB PARTS LIST

NOTES: • Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
• The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
• When ordering resistors, first convert resistance values into code form as shown in the following examples.
Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).
560 Ω → 56 × 10¹ → 561 ..... RD1/4PU 5 6 1 J
47k Ω → 47 × 10³ → 473 ..... RD1/4PU 4 7 3 J
0.5 Ω → R50 ..... RN2H R 5 0 K
1 Ω → 1R0 ..... RS1P 1 R 0 K
Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).
5.62k Ω → 562 × 10¹ → 5621 ..... RN1/4PC 5 6 2 1 F

MARK	CIRCUIT NO.	PART NO.	PART NAME
		DX-V370	DX-V350
	PKSB AS	VWG1555	VWG1555
	FG AS	VWG1556	VWG1556
	TNSB AS	VWG1557	VWG1557
	BISB AS	VWG1558	VWG1558
	LMSB AS	VWG1612	VWG1612
	POWER AS	VWR1267	VWR1267
	MOTHER AS	VWS1306	VWS1307
	VCDB AS	VWV1508	
	CNNB AS		VWV1472
	FLKY AS	VWG1824	VWG1810
	KEYB AS	VWG1823	VWG1811
PKSB ASSY			
	S104,S105	DSG1017	Push switch
FG ASSY			
	D101	GP1S24	Photo interrupter
TNSB ASSY			
	S111	DSG1017	Push switch
BISB ASSY			
	S112	DSG1017	Push switch
LMSB ASSY			
	CN101	52044-1245	Connector
	S101-S103	DSG1017	Push switch
KEYB ASSY			
	CN201	52492-2120	Connector
V370	CN203	52492-2220	Connector
V350		52492-1620	Connector
	S201-S208	ASG1034	Tact switch
FLKY ASSY			
V370	IC101	PD3364B	Microprocessor IC
V350		PD3360A	Microprocessor IC
	IC141	S-806D	Reset IC
		GP1U28X	Remote control sensor
V370	V101	VAW1044	FL tube
V350		VAW1041	FL tube
	Q141	2213290	DTC114ES,Transistor
	Q142	2213750	DTA144ES,Transistor

MARK	CIRCUIT NO.	PART NO.	PART NAME
	D141	223202	1SS254,Diode
	D301,D302	SLR-342MCT31	LED, green
	D303	SLR-342VCT31	LED, red
	C101	355724709	47μF,6.3V, Elect.
	C142,C301	355741009	10μF,16V, Elect.
	X101	EFOEC8004A4	Ceramic resonator
	S301-S303	ASG1034	Tact switch
	CN101	52044-2145	Connector
		VEC1599	Spacer
		VNF1087	FL holder
POWER ASSY			
⚠	IC1	252113	ICP-N20,IC protector
⚠	IC2	22240517	ICP-N15,IC protector
	IC20	HA17431P	Regulator IC
	IC21	222465	NJM4558D
⚠	Q1	2SK1460	FET
⚠	Q2,Q3	2SC3377	Transistor
	Q20,Q22	2SB1566	Transistor
	Q21,Q23	2SD2395	Transistor
	Q24	2SB891F	Transistor
	Q25,Q29,Q31	2213284	2SA1740S-R,Transistor
⚠	Q26	2SD2007	Transistor
	Q27,Q30,Q32	2213354	2SA933S-R,Transistor
⚠	D1	D2SB60F4004	Bridge diode
⚠	D2	EG01C	Diode
⚠	D20	PS2501L1-1M	Photo coupler
	D21,D22,D24	S2LA20	Diode
	D23	RK36	Diode
	D25-D27,D30,D31	AG01Z-VO	Diode
	D29	MTZJ8.2B	Zener diode
⚠	D3	RD18FB2	Zener diode
	D40	RD30FB3	Zener diode
⚠	D5	MTZJ3.6A	Zener diode
⚠	D7	223205	1SS270A,Diode
⚠	R22-R25	VCN1033	47Ω,Fuse resistor
⚠	R27	VCN1046	0.47Ω,Fuse resistor
⚠	R29	VCN1048	68Ω,Fuse resistor
⚠	R31	VCN1050	8.2Ω,Fuse resistor
⚠	F1	AEK1057	T-2A/125V, Fuse
⚠	F2	VEK1033	Thermal fuse
⚠	F3,F4	VEK1034	Thermal fuse
⚠	F5,F6	VEK1035	Thermal fuse

MARK	CIRCUIT NO.	PART NO.	PART NAME
MOTHER ASSY (DX-V370)			
	IC101	PD0245A2	Microprocessor
	IC202	XRA4560F	BA4560F,IC
	IC300	TC9409BF	DASP IC
	IC351	22240675	CA0002AM,IC
	IC400	LA7134M	Video IC
	IC500	PD0234A	D-Video processor
	IC701	TC74HC4053AF	Logic IC
	IC702	NJM2235M	Switch IC
	IC703	MC14577CP	Video amp. IC
	IC801	LA9425	Preamp. IC
	IC802	LC78621E	Servo control IC
	IC803	22240509	TA8410AK,Op. amp
	IC804	TC4W53F	Analog switch
	IC901	LA9420M	Servo control
	IC902	22240509	TA8410AK,Op. amp
	IC903,IC905	XRA4560F	BA4560F,IC
	IC904	BA10393F	Comparator IC
	Q102,Q501	2PB709A	Transistor
	Q103,Q303,Q901	2214070R1	DTC124EK,Transistor
	Q152	2SC3802K	Transistor
	Q201,Q202	2PD601A	Transistor
	Q204,Q205	2SD2144S	Transistor
	Q208,Q301,Q392	DTA124EK	Transistor
	Q391,Q393,Q394	2PD601A	Transistor
	Q411,Q803	2SC2412K	Transistor
	Q451,Q475,Q701	2PD601A	Transistor
	Q805,Q903,Q904	2PD601A	Transistor
	Q834	2SA854S	Transistor
	Q840	FMY1A	Dual transistor
	Q907,Q908	2PD601A	Transistor
	Q910	DTC124EK	Transistor
	Q915,Q917	2PD601A	Transistor
	Q916,Q1001	2PB709A	Transistor
	Q918	DTA124EK	Transistor
	D180,D801,D901	1SS254	Diode
	D902,D905,D963	1SS254	Diode
	D802	1SS355	Diode
	D805	KV1851	Variable capacitor diode
	D110	224470512	MTZJ5.1B,Zener diode
	F501	VTF1055	14.3MHz filter
	X101	VSS1040	9.0MHz ceramic resonator
	X550	VSS1073	14.318MHz crystal resonator
	X801	VSS1081	16MHz ceramic resonator
	L5001	VTH1024	Ferrite bead
	F305,F306	DTF1069	Bead
	L304	LAU4R7J	Coil
	L351,L802-L804	LAU181J	Coil
	L352,L412,L415	LAU220J	Coil
	L410	LAU101J	Coil
	L411,L571	LAU270J	Coil
	L413	LAU100J	Coil
	L414	LAU8R2J	Coil
	L420,L421,L580	LAU430J	Coil
	L460	LFA561J	Coil
	L461,L470,L800	LAU220J	Coil
	L462	LAU560J	Coil

MARK	CIRCUIT NO.	PART NO.	PART NAME
	L590,L591	LAU270J	Coil
	L801,L808,L809	LAU220J	Coil
	C101,C225,C226	354731009	47 μF,10V, Elect.
	C201,C202,C274	354781009	10 μF,50V, Elect.
	C227,C281,C904	354780109	1 μF,50V, Elect.
	C270,C271	CEJA470M10	Elect. capacitor
	C275,C339,C340	354781009	10 μF,50V, Elect.
	C305,C307,C311	354731019	100 μF,10V, Elect.
	C315,C333,C334	354731019	100 μF,10V, Elect.
	C337	354723319	330 μF,6.3V, Elect.
	C363,C369,C369	354731009	47 μF,10V, Elect.
	C364,C424,C917	354731019	100 μF,10V, Elect.
	C367	354781009	10 μF,50V, Elect.
	C368,C943	CEASR47M50	Elect. capacitor
	C412,C484,C491	354724709	47 μF,6.3V, Elect.
	C439	354741019	100 μF,16V, Elect.
	C450	CEANP470M6R3	Non-polar elect.
	C493,C530,C534	354731009	47 μF,10V, Elect.
	C538,C550,C585	354731009	47 μF,10V, Elect.
	C588,C763,C765	354731009	47 μF,10V, Elect.
	C701,C703	354724709	47 μF,6.3V, Elect.
	C706-C708	354724709	47 μF,6.3V, Elect.
	C801,C803,C820	354731009	47 μF,10V, Elect.
	C821,C922,C967	354752209	22 μF,25V, Elect.
	C833,C836,C844	354724709	47 μF,6.3V, Elect.
	C838	CEALNP470M6R3	Non-polar elect.
	C842,C882,C890	354731009	47 μF,10V, Elect.
	C845,C870	354780229	2.2 μF,50V, Elect.
	C850	CEJA4R7M35	Elect. capacitor
	C871	VCH1152	Elect. capacitor
	C893,C898,C927	354731009	47 μF,10V, Elect.
	C902,C926	354780229	2.2 μF,50V, Elect.
	C933,C974,C975	354731009	47 μF,10V, Elect.
	C968,C987	CEHAQ220M50	Elect. capacitor
	C972	CEANP220M10	Non-polar elect.
	VC901	VCM-008	Trimming capacitor
	VR450	PCP1025	2.2k, Trimming resistor
	VR603	RCP1020	4.7k, Trimming resistor
	VR604,VR607,VR608	RCP1047	47k, Trimming resistor
	CN102	52045-2145	Connector
	CN103	VKN1199	Connector
	CN106	B11P-SHF-1AA	Connector
	CN107	52045-2245	Connector
	CN108	52045-1245	Connector
	CN701	BTFN20S-3SB7	Connector
	CN703	B3B-PH-K-S	Connector
	JA14	VKB1091	Terminal
	JA6	VKB1065	Terminal
VCDB AS (DX-V370)			
	IC101	CXD1852Q	VCD decoder IC
	IC101,IC603	TC7WU04F	Logic IC
	IC201	HM514260CLJ-7	DRAM
	IC301	CXD1913AQ	Digital video encoder IC
	IC401	MC14577CF	Video amp. IC
	IC402	TC7S08F	AND gate
	IC501	PD6193A	VCD control microprocessor

MARK	CIRCUIT NO.	PART NO.	PART NAME
	IC601	TC74HC125AF	Logic IC
	IC602	TC74HCT7007AF	Hex buffer IC
	IC701	TC7W74F	Logic IC
	IC801	PQ20VZ51	Regulator IC
	Q103	2PB709A	Transistor
	C101,C120,C204	354724709	47 μ F,6.3V, Elect.
	C303,C313,C802	354724709	47 μ F,6.3V, Elect.
	F101	VTH1037	Filter
	CN101	BTFN20P-3RD7	Connector
	CN201	B3B-PH-K-S	Connector
	X501	CSAC4.00MGCM	4MHz,Ceramic resonator
	X401	DSS1069	33.86MHz,Ceramic resonator
	X103	VSS1095	27MHz,Crystal resonator
	X102	VSS1097	45.1584MHz,Crystal resonator

MOTHER ASSY (DX-V350)

	IC101	PD0245A2	Mechanism microprocessor
	IC202,IC903,IC905	XLA4560F	IC
	IC351	22240675	CA0002AM,Audio IC
	IC400	LA7134M	Video IC
	IC500	PD0234A	Digital video processor
	IC701	CXD2046Q	IC
	IC703	MC14577CP	Video amp. IC
	IC801	LA9425	Preamp. IC
	IC802	LC78620E	Servo control IC
	IC803	22240034	LA6510,Op. amp.
	IC804	TC4W53F	Analog switch
	IC901	LA9420M	Servo control IC
	IC902	TA8410AK	Op. amp.
	IC904	XLA10393F	Comparator
	Q1,Q916	2PB709A	Transistor
	Q102,Q750,Q753	2PB709A	Transistor
	Q103,Q303	2214070R1	DTC124EK, Transistor
	Q152	2SC3802K	Transistor
	Q201,Q202,Q391	2PD601A	Transistor
	Q204,Q205	2214280	2SD2144S, Transistor
	Q208,Q301,Q392	2214060R0	DTA124EK,Transistor
	Q393,Q394,Q451	2PD601A	Transistor
	Q411,Q803	2214650	2SC2412-K,Transistor
	Q475,Q702,Q703	2PD601A	Transistor
	Q805,Q903,Q904	2PD601A	Transistor
	Q834	2SA854S	Transistor
	Q840	FMY1A	Dual transistor
	Q901,Q910	2214070R1	DTC124EK, Transistor
	Q907,Q908	2PD601A	Transistor
	Q915,Q917	2PD601A	Transistor
	Q918	2214060R0	DTA124EK,Transistor
	D805	KV1851	Variable capacitor diode
	D110	MTZJ5.1C	Zener diode
	D180,D801,D901	223202	1SS254, Diode
	D902,D905,D963	223202	1SS254, Diode
	D802	223231R1	1SS355, Diode
	VR450	PCP1025	Trimming resistor
	VR603	RCP1020	Trimming resistor
	VR604,VR607	RCP1047	Trimming resistor
	VR608	RCP1047	Trimming resistor
	C534,C836,C842	354724709	47 μ F,6.3V, Elect.

MARK	CIRCUIT NO.	PART NO.	PART NAME
	C450,C838	CEALNP470M6R3	4.7 μ F,6.3V, Non-polar elect.
	C972	CEANP220M10	22 μ F,10V, Non-polar elect.
	C274,C275	354781009	10 μ F,50V, Elect.
	C367,C439	354781009	10 μ F,50V, Elect.
	C270,C271,C363	354731019	100 μ F,10V, Elect.
	C364,C369,C424	354731019	100 μ F,10V, Elect.
	C530,C550,C700	354731019	100 μ F,10V, Elect.
	C701,C763,C765	354731019	100 μ F,10V, Elect.
	C801,C803,C820	354731019	100 μ F,10V, Elect.
	C895,C898,C917	354731019	100 μ F,10V, Elect.
	C927,C933	354731019	100 μ F,10V, Elect.
	C974,C975	354731019	100 μ F,10V, Elect.
	C227,C281,C904	354780109	1 μ F,50V, Elect.
	C821,C922	354752209	22 μ F,25V, Elect.
	C845,C870	354780229	2.2 μ F,50V, Elect.
	C902,C926	354780229	2.2 μ F,50V, Elect.
	C484	354733319	330 μ F,10V, Elect.
	C368,C943	354784799	0.47 μ F,50V, Elect.
	C987	CEHAQ220M50	22 μ F,50V, Elect.
	C850	CEJA4R7M35	4.7 μ F,35V, Elect.
	C871	VCH1152	Elect. capacitor
	VC901	VCM-008	Trimming capacitor
	F500,F547	DTF1069	Chip bead
	F548,F5554	DTF1069	Chip bead
	L100,L352,L412	LAU220J	Coil
	L351,L802	LAU181J	Coil
	L410	LAU101J	Coil
	L411,L571	LAU270J	Coil
	L413	LAU100J	Coil
	L414	LAU8R2J	Coil
	L420,L421,L580	LAU430J	Coil
	L460	LFA561J	Coil
	L461,L470,L700	LAU220J	Coil
	L462	LAU560J	Coil
	L5004	LAU1R0J	Coil
	L750-L752,L800	LAU220J	Coil
	L801,L806-L809	LAU220J	Coil
	L803,L804	LAU181J	Coil
	F501	VTF1055	14.3MHz filter
	L5005	VTH1024	Ferrite bead
	CN503,CN701	BTFN12S-3SB7	Connector
	CN106	B11P-SHF-1AA	Connector
	CN103	VKN1199	Connector
	CN0108	52045-1245	Connector
	CN0121	52045-1645	Connector
	CN0102	52045-2145	Connector
	JA0008	GP1F32T	Opto. module
	JA6	VKB1065	Terminal
	JA15	VKB1093	Terminal
		VKN1134	S terminal
	X101	VSS1040	Ceramic resonator
	X550	VSS1073	Crystal resonator
	X801	VSS1081	Crystal resonator

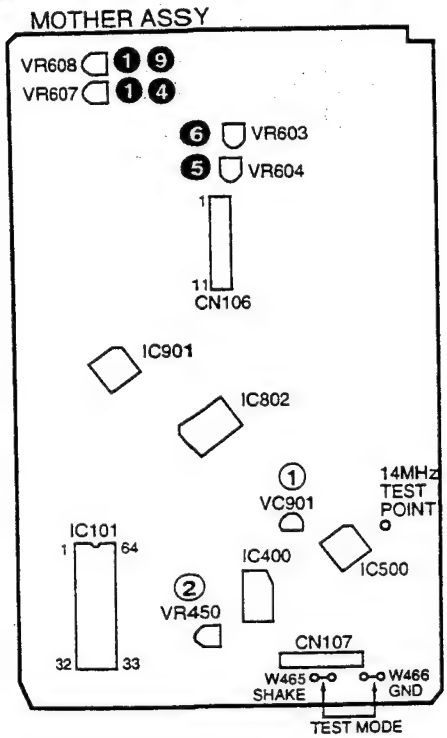
CNNB ASSY (DX-V350)

	CN510,CN710	BTFN12P-3RD7	Connector

6. ADJUSTMENT

6.1 ADJUSTMENT ITEMS AND LOCATION

■Adjustment Points (PCB Part)



■Adjustment Items

[Mechanical Part]

❶ Tilt Offset Adjustment

❷ Tangential Direction Angle Adjustment for Side A

❸ Spindle Motor Centering Adjustment for Side A

❹ Crosstalk Check and Fine Tilt Offset Adjustment for Side A

❺ Focus Servo Loop Gain Adjustment

❻ Tracking Servo Loop Gain Adjustment

❼ Tangential Direction Angle Adjustment for Side B

❽ Spindle Motor Centering Adjustment for Side B

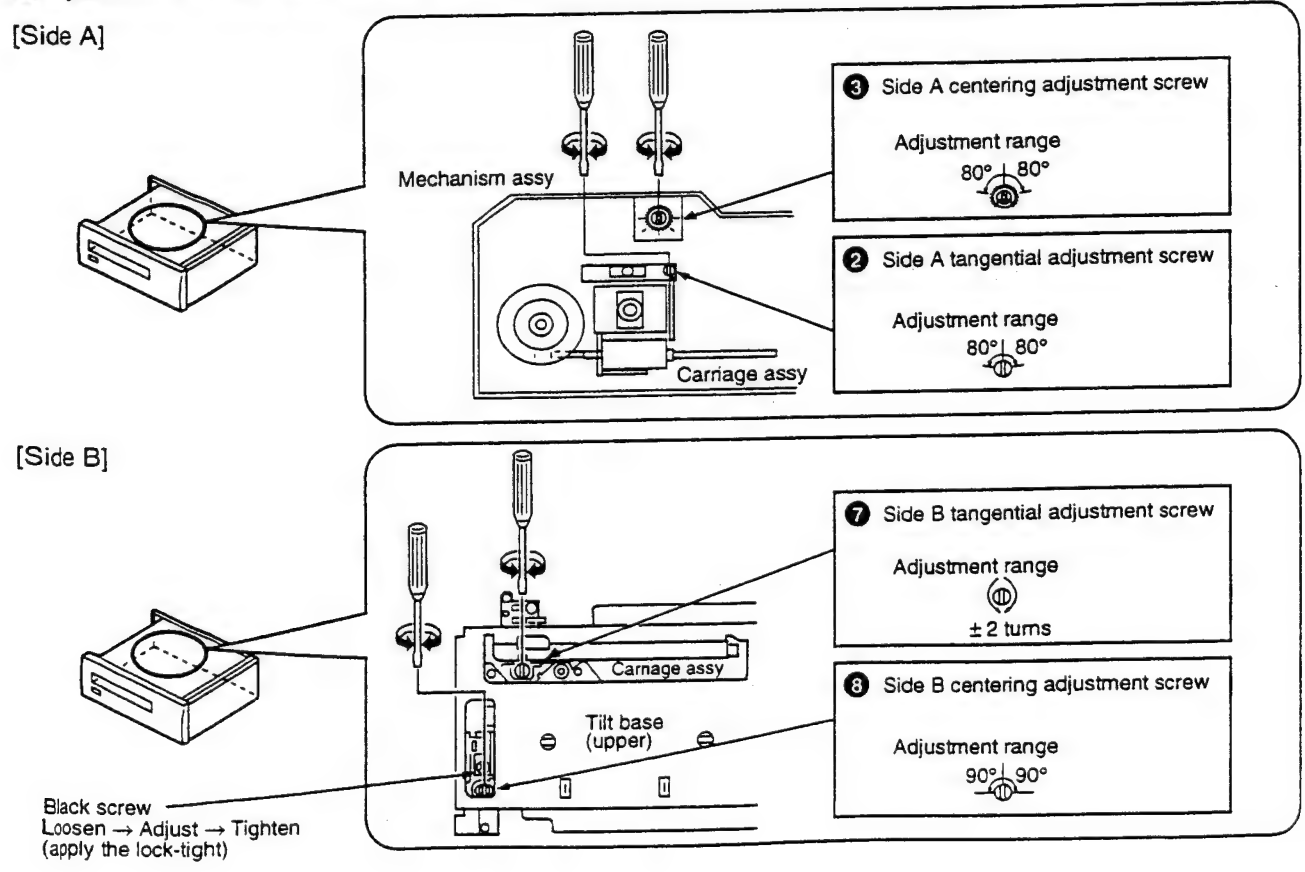
❾ Crosstalk Check and Fine Tilt Offset Adjustment for Side B

[Electrical Part]

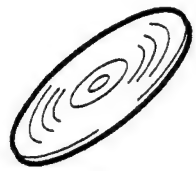
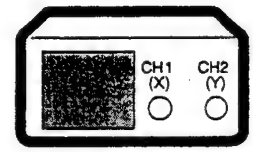
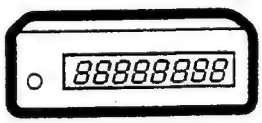
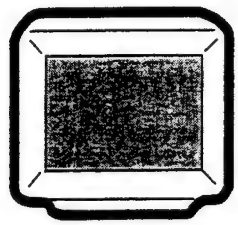
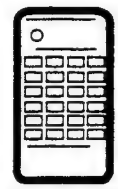
① Master Clock Adjustment

② Output Video Level Adjustment

■Adjustment Points (Mechanism Part)

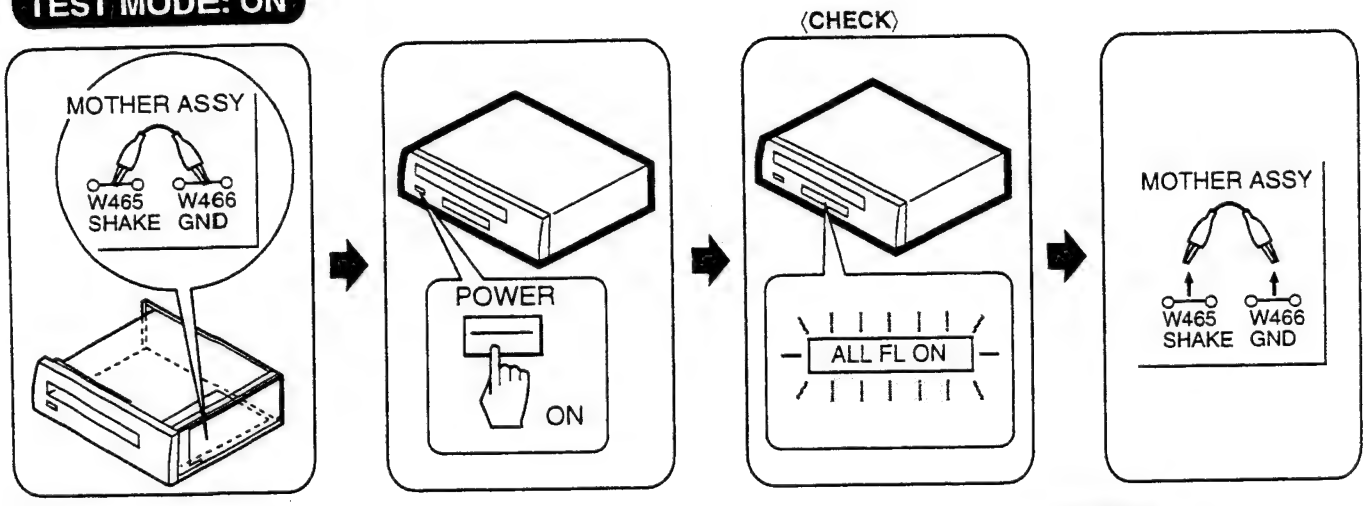


6.2 JIGS AND MEASURING INSTRUMENTS

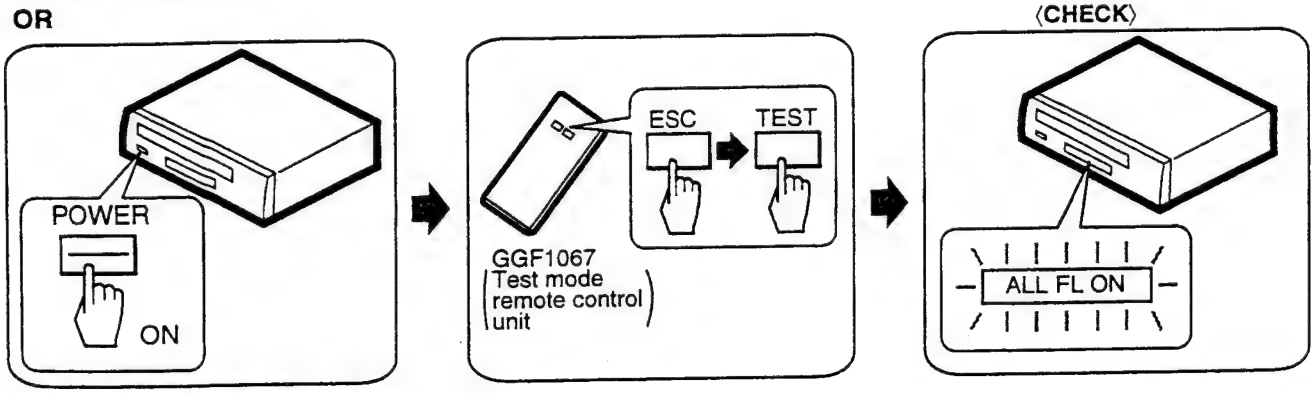
 CD test disc (YEDS-18)	 LD test disc (GGV1012)	 ⊖ Screwdriver (medium)	 ⊖ Screwdriver (small)
 ⊖ Precise screwdriver	 ⊕ Screwdriver (large)	 ⊕ Screwdriver (medium)	 Dual-trace oscilloscope (with delay) Frequency band ≧ 40MHz
 Frequency counter Display digit ≧ 8-digit	 TV monitor	 Test mode remote control unit (GGF1067)	

6.3 TEST MODE

TEST MODE: ON

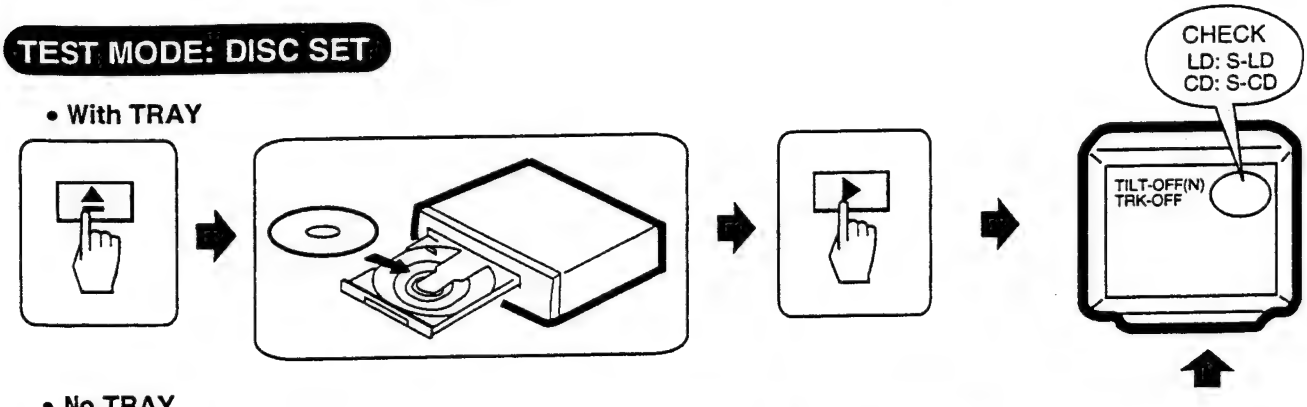


OR

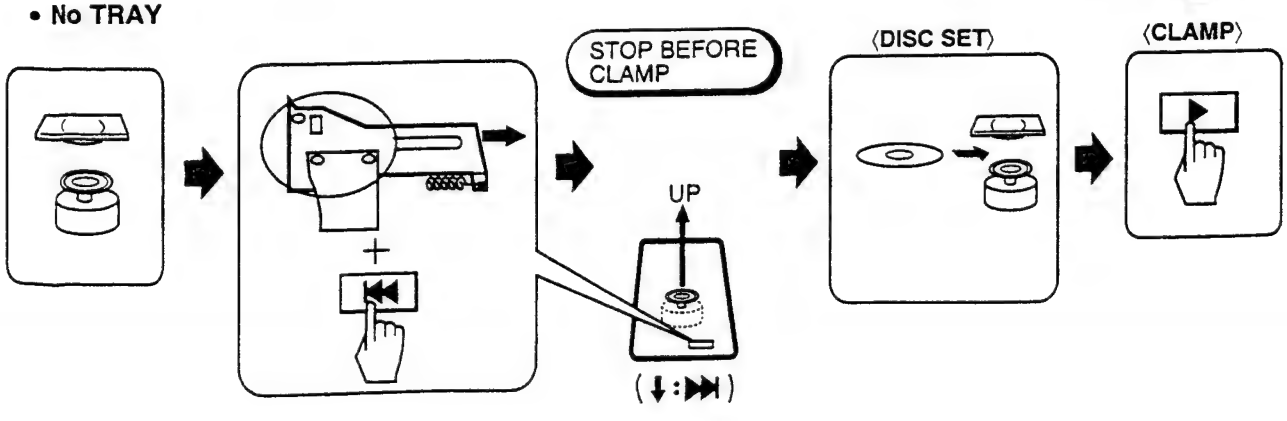


TEST MODE: DISC SET

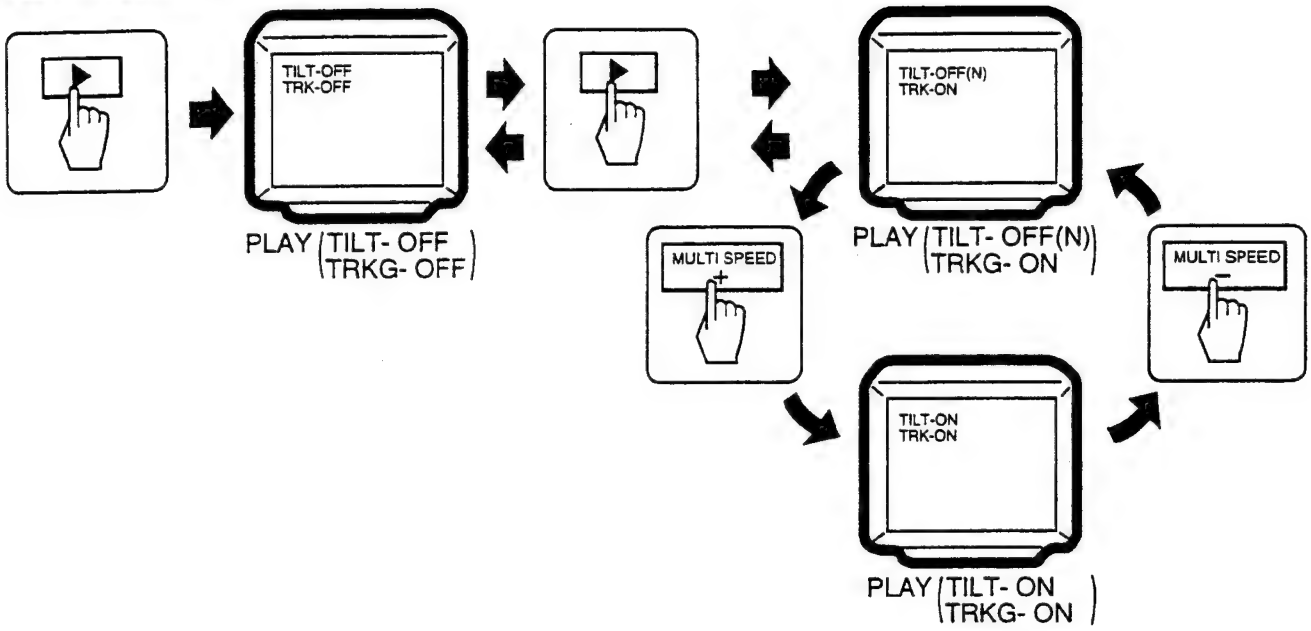
• With TRAY



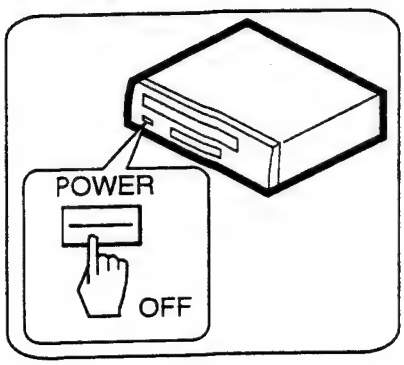
• No TRAY



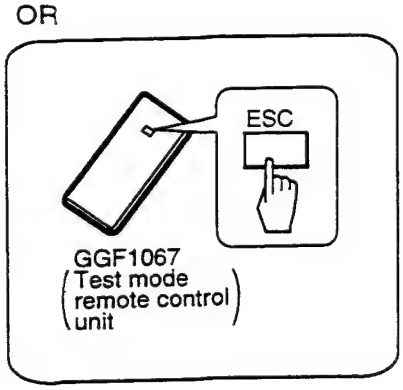
TEST MODE: PLAY



TEST MODE: OFF



OR



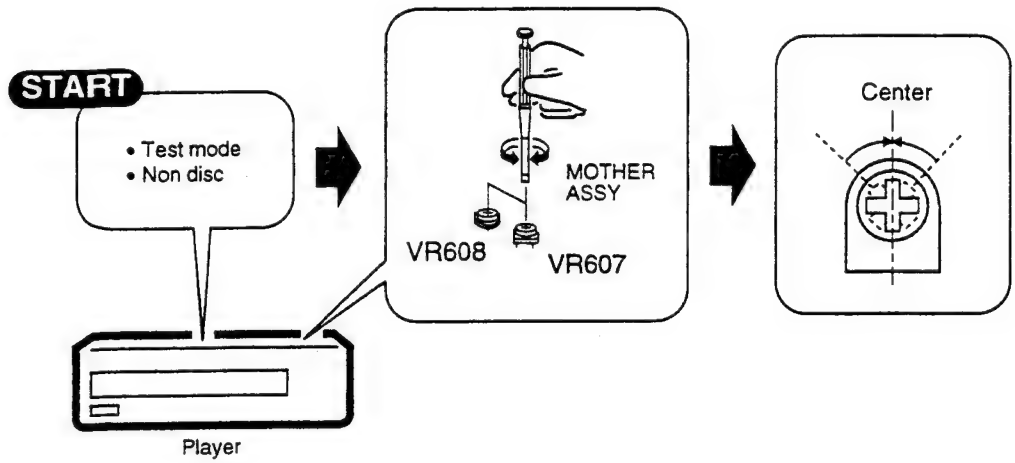
6.4 NECESSARY ADJUSTMENT POINTS

When	Adjustment Points
■ EXCHANGE MECHANISM ASSY PARTS	
Exchange pickup	Mechanical point: ❶,❷,❸,❹,❺,❻,❼,❽,❾ Electric point: ————
Exchange spindle motor	Mechanical point: ❸,❽ Electric point: ————
■ EXCHANGE PCB ASSY	
Exchange board MOTHER ASSY	Mechanical point: ❶,❹,❺,❻,❾ Electric point: ————

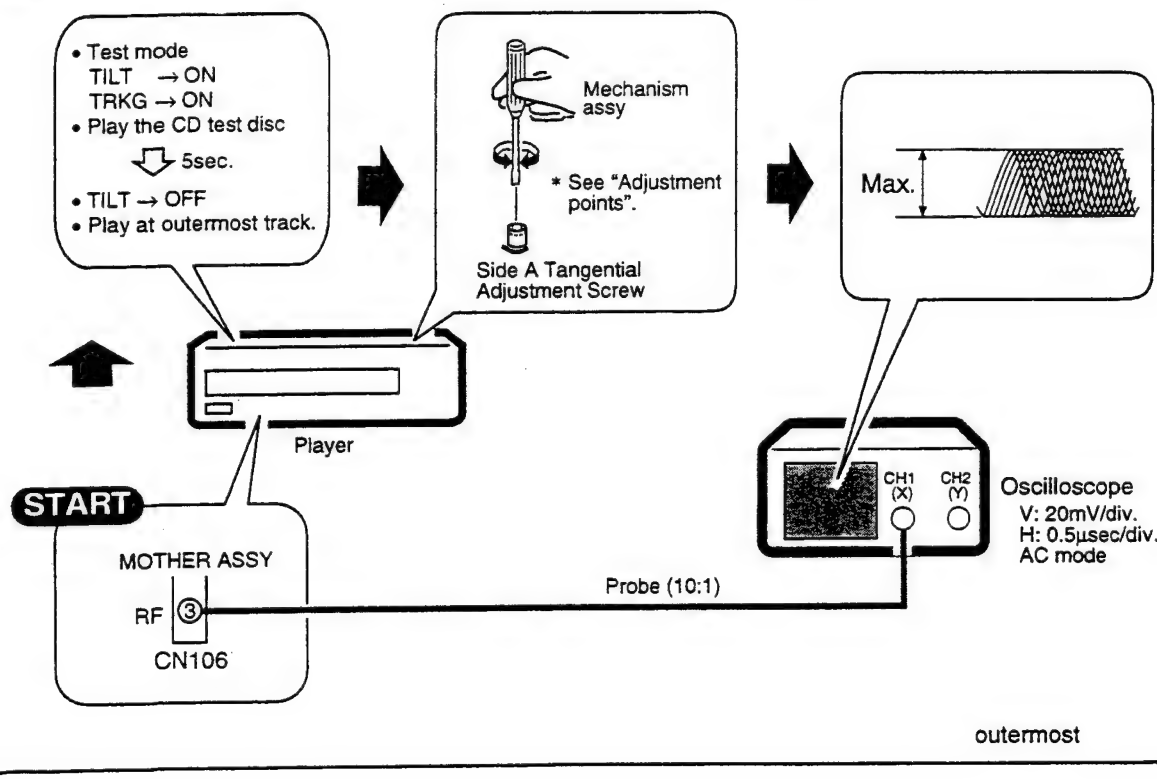
Note : ① and ② are adjusted already.

6.5. MECHANICAL ADJUSTMENT

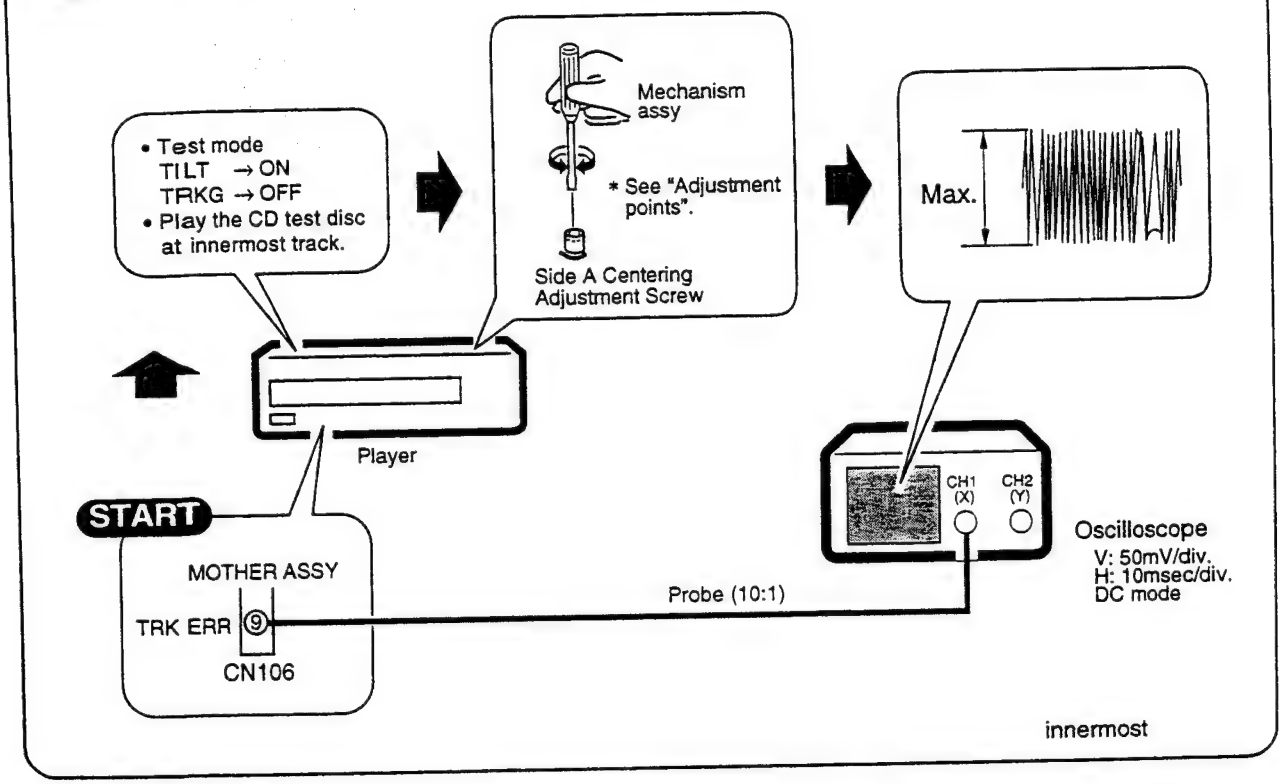
❶ Tilt Offset Adjustment



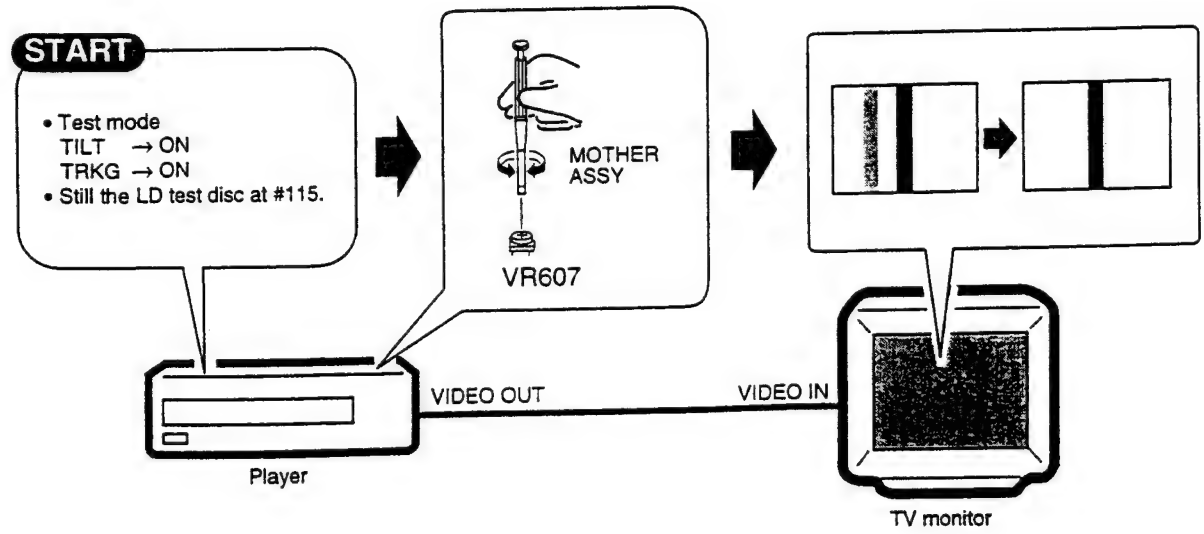
❷ Tangential Direction Angle Adjustment for Side A



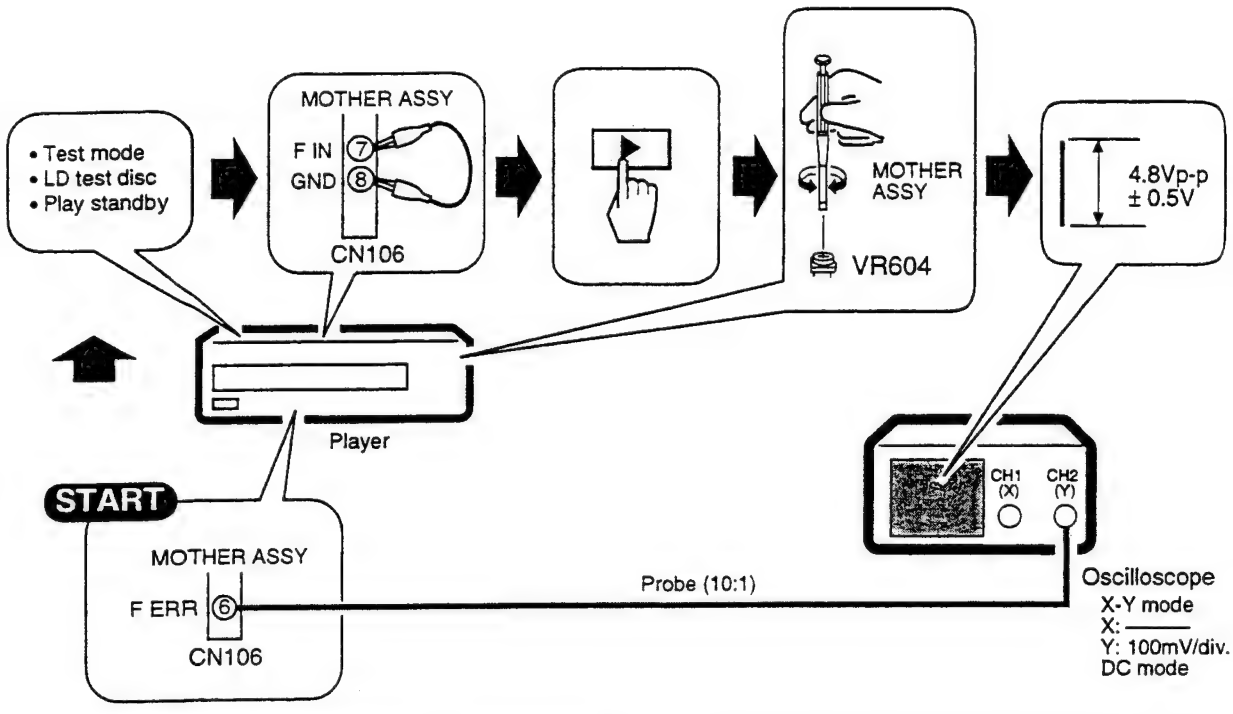
❸ Spindle Motor Centering Adjustment for Side A



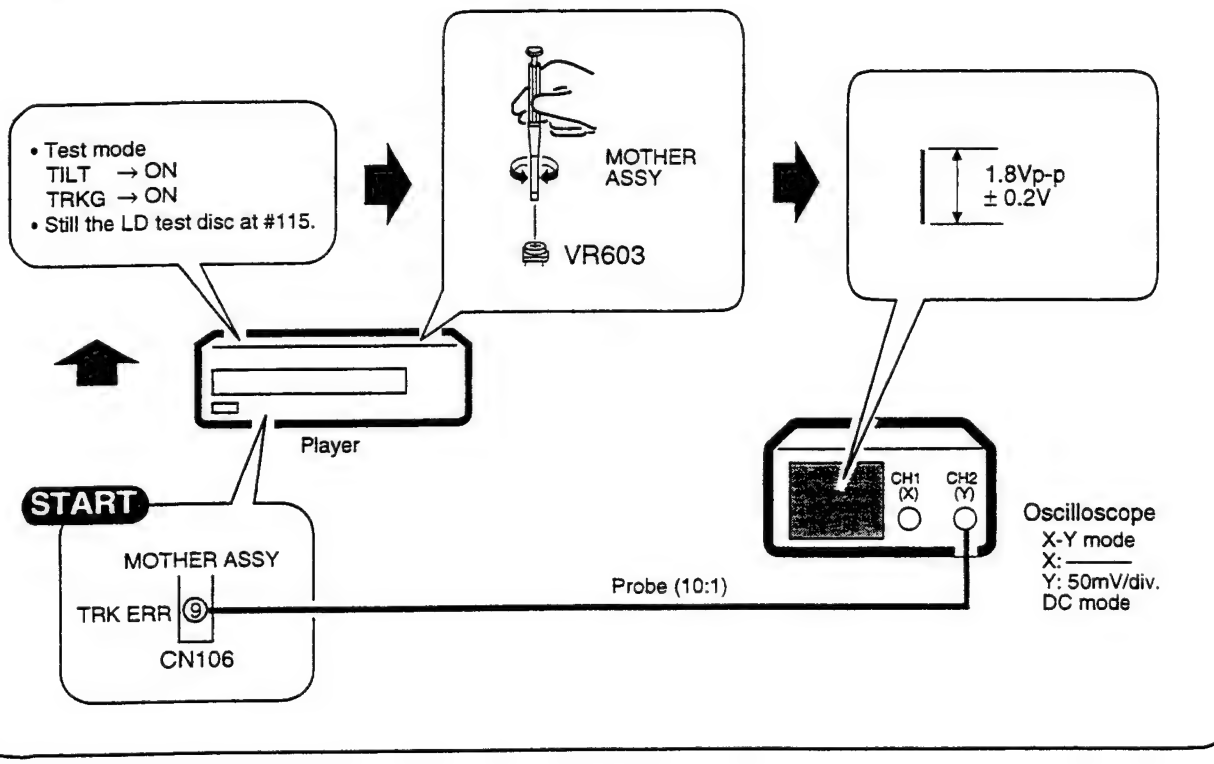
❹ Crosstalk Check and Fine Tilt Offset Adjustment for Side A



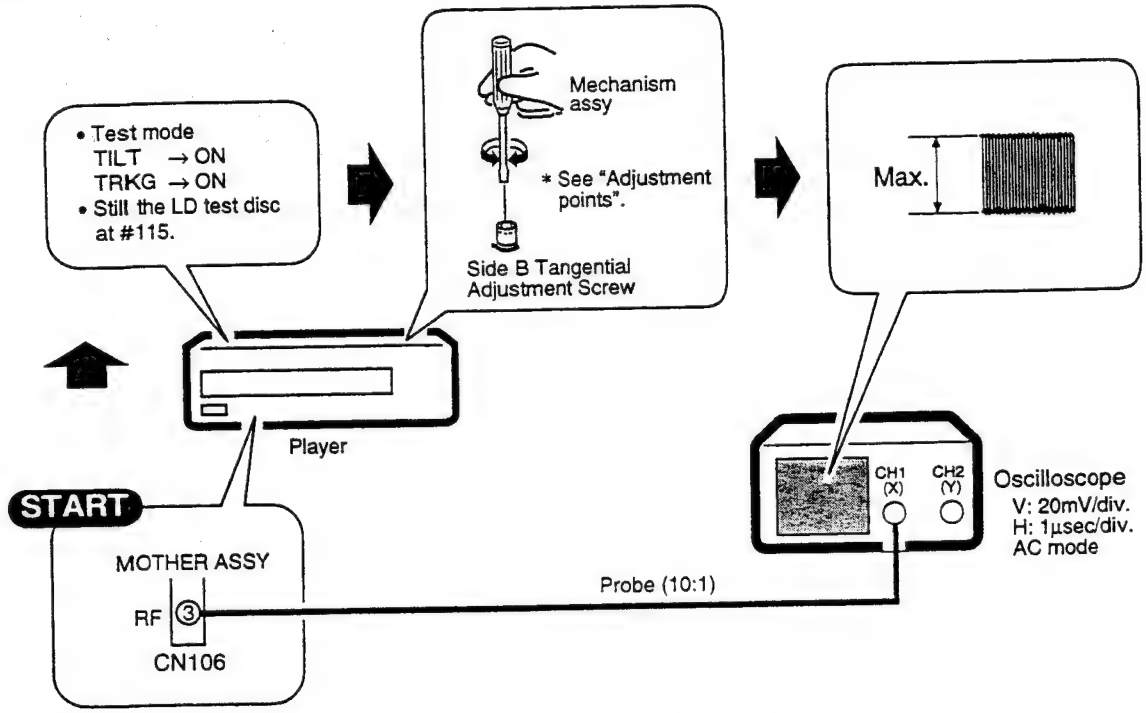
5 Focus Servo Loop Gain Adjustment



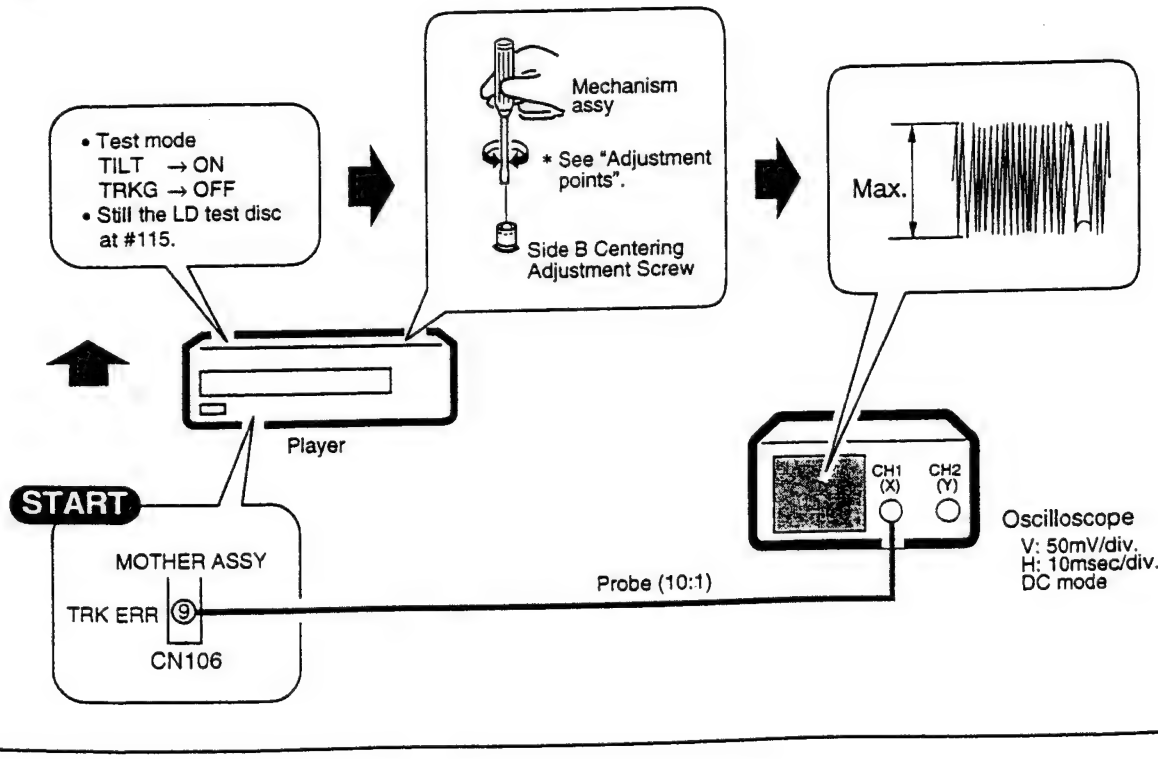
6 Tracking Servo Loop Gain Adjustment



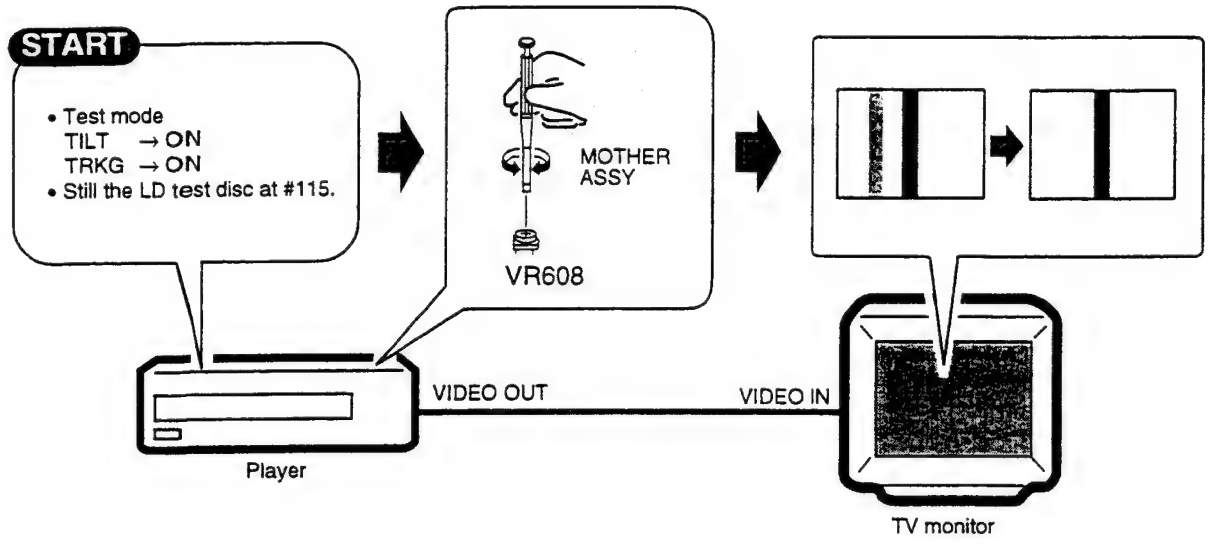
7 Tangential Direction Angle Adjustment for Side B



8 Spindle Motor Centering Adjustment for Side B

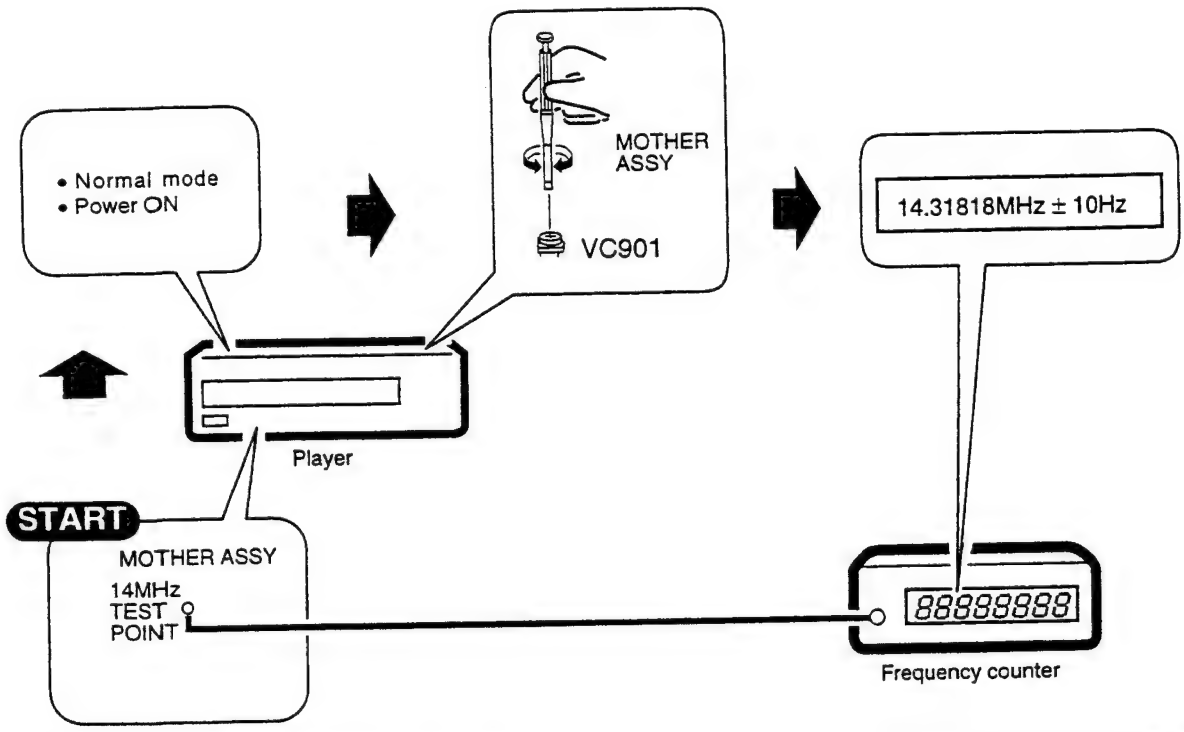


9 Crosstalk Check and Fine Tilt Offset Adjustment for Side B

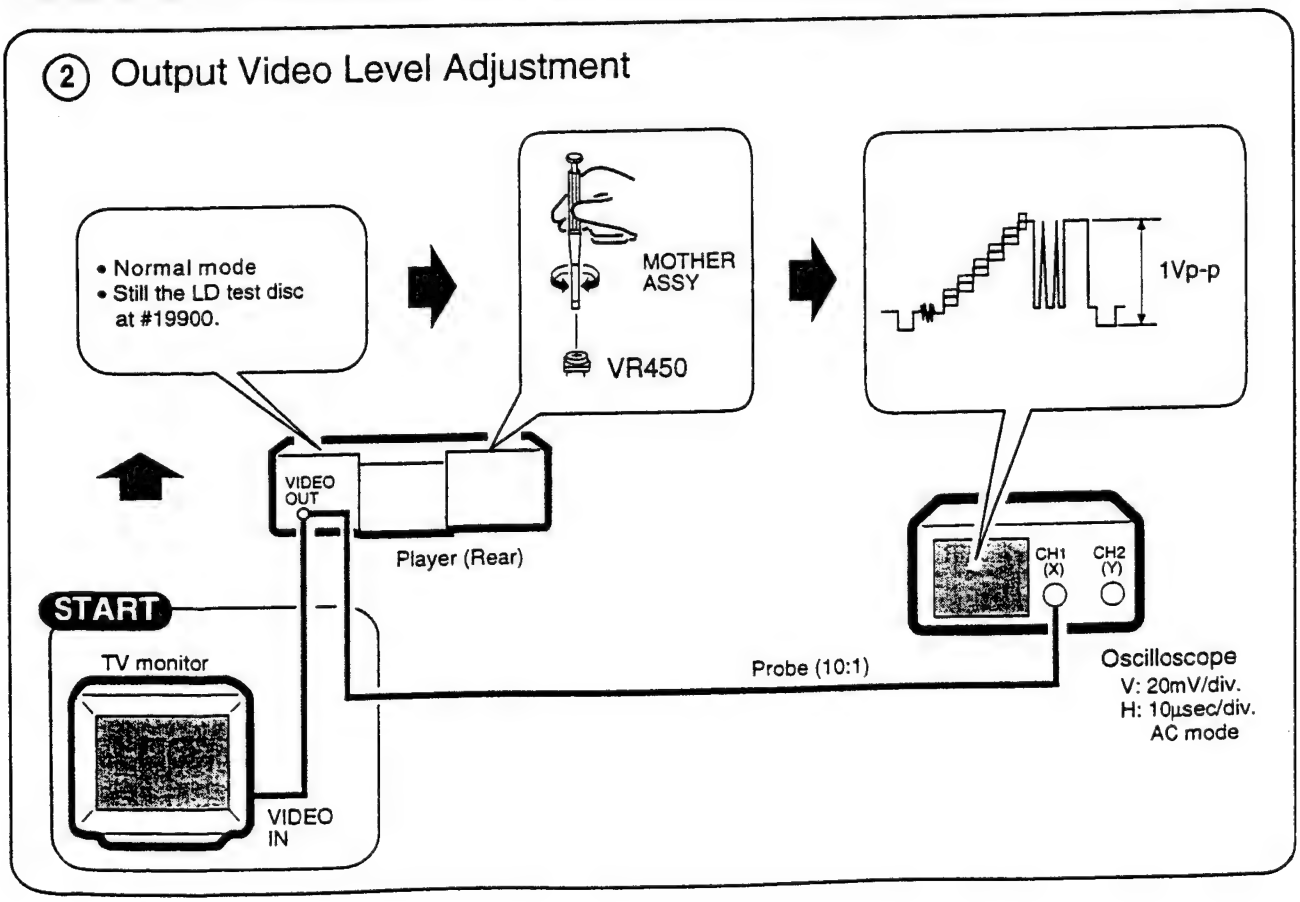


6.6 ELECTRICAL ADJUSTMENT

① Master Clock Adjustment

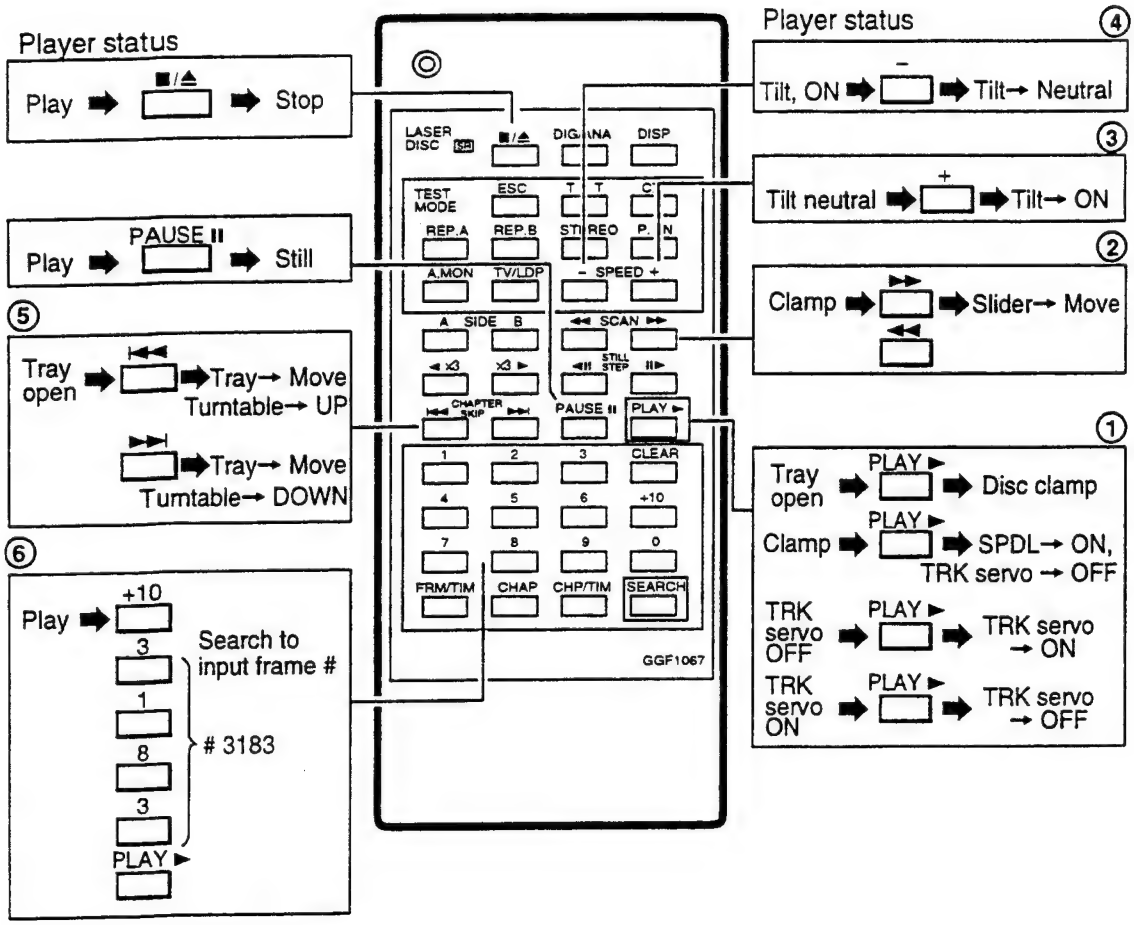


② Output Video Level Adjustment

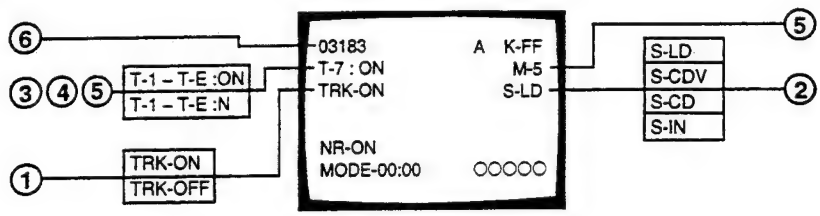


6.7 OPERATIONS IN THE TEST MODE

■ Test Mode Remote Control Unit (GGF1067)



■ TV Monitor Display



7. GENERAL INFORMATION

7.1 PARTS

7.1.1 IC

• The information in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

■PD3364A (FLKB ASSY : IC101)

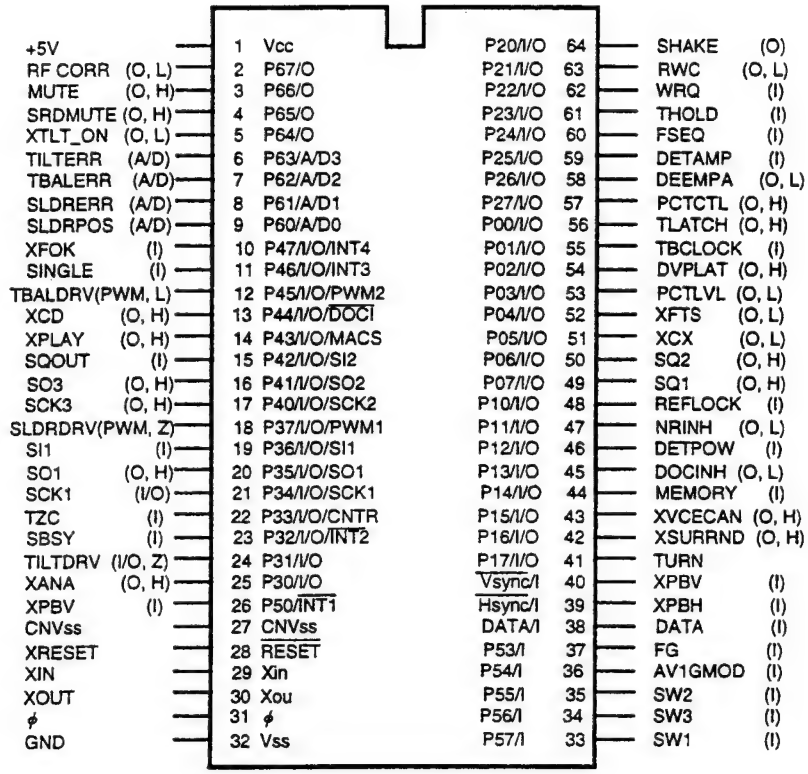
• MODE CONTROL IC

• Pin Function

No.	Mark	Pin name	I/O	Function
1	VCC	—	I	+5V power supply
2	P90	XRESET OUT	O	MOTHER ASSY reset output
3	SCK1	XSCK	I/O	Serial communication clock (mecha. control and character generator)
4	SI1	S-MTOF	I	Serial communication data input (mecha. control and VCD control)
5	SO1	S-FTOM	O	Serial communication data output (mecha. control and character generator and VCD control)
6	P94	XOSDCS	O	Character generator (PD0234A) CS output (L : enable)
7	P95	Not used	O	NC
8	P96	Not used	O	NC
9	P97	POWER ON	O	Power supply switching output of the MOTHER ASSY
10	AVC C	—	I	+5V power supply
11	P00	KEYIN3	I	Key data input
12	P01	FSX	I	For error rate measurement
13	P02	KEYIN1	I	Key data input
14	P03	Not used	I	GND
15	P04	Not used	I	GND
16	P05	MODEL SELECT 1	I	Power supply switch
17	P06	Not used	I	GND
18	P07	Not used	I	GND
19	AVSS	—	I	GND
20	TEST	Not used	I	GND
21	X2	Not used	O	NC (OPEN)
22	X1	Not used	I	+5V
23	VSS	GND	I	GND
24	OSC 1	—	I	Main system clock oscillation (8MHz)
25	OSC 2	—	O	
26	XRST	XRESET IN	I	CPU reset (L : RESET)
27	IRQ0	SHAKE	I/O	Mechanism control serial communication requirement
28	IRQ1	SEL IR	I	Remote control input
29	P14	V-ACK	I/O	VCD control serial communication requirement
30	P15	EFLG	I	For error rate measurement
31	P16	Not used	I	GND
32	P47	DOGFOOD	O	Pulse output for WATCH DOG
33	P46	Not used	O	NC (OPEN)
34	P45	Not used	O	NC (OPEN)
35	P44	Not used	O	NC (OPEN)
36	P43	Not used	O	NC (OPEN)
37	P42	SEG K	O	Display segment output
38	P41	SEG J		
39	P40	SEG I		
40	P50	SEG H		
41	P51	SEG G		
42	P52	SEG F		
43	P53	SEG E		
44	P54	SEG D		
45	P55	SEG C		
46	P56	SEG B		
47	P57	SEG A		
48	VDISP	-29V	I	-29V
49	P60	G10	O	Display grid output
50	P61	G9		
51	P62	G8		
52	P63	G7		
53	P64	G6		
54	P65	G5		
55	P66	G4		
56	P67	G3		
57	P70	G2		
58	P71	G1		
59	P72	LED (SURROUND)	O	LED output : Surround
60	P73	LED (VCD SYSTEM)	O	LED output : VIDEO CD system
61	P74	LED (STANDBY)	O	LED output : Standby
62	P75	LD/XVCD	O	LD/VCD screen switch
63	P76	XDSPCS	O	DSP (TC9409AF) CS output (L : enable)
64	P77	Not used	O	NC (OPEN)

■ PD0245A2 (MOTHER ASSY : IC101)

- **MECHANISM CONTROL IC**
- **Pin Arrangement (Top View)**



- **Pin Function**

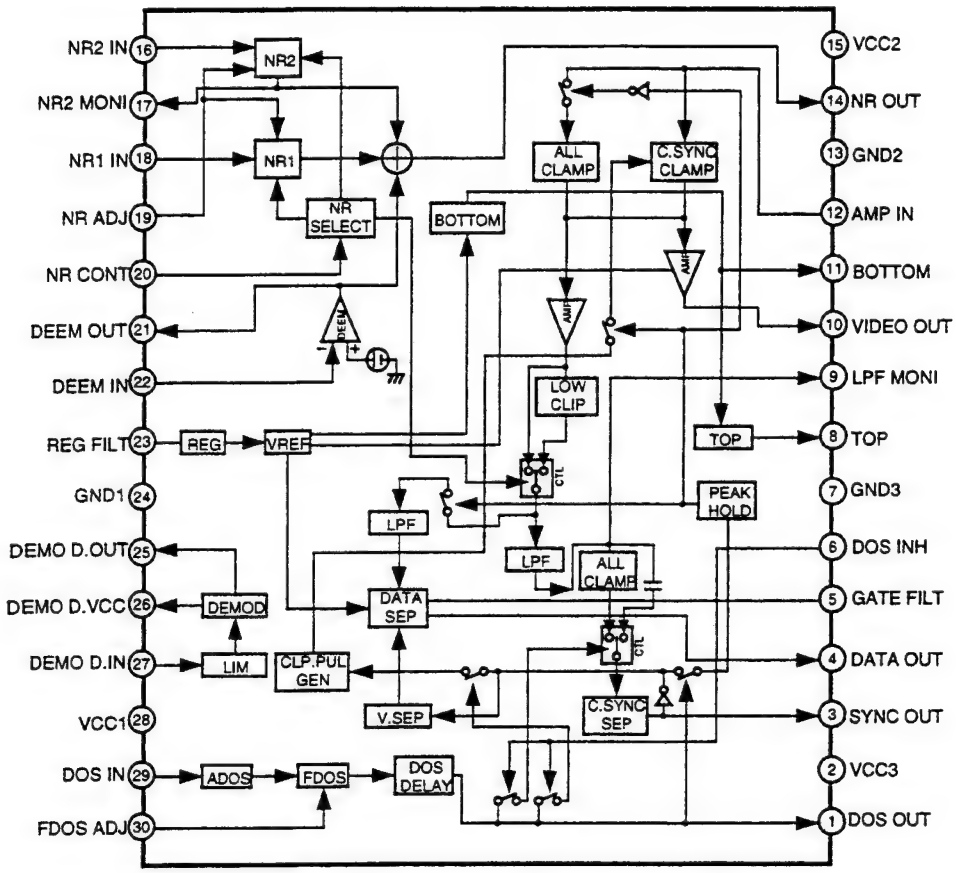
No.	Pin Name	I/O	Function
1	VCC	I	Power supply pin Apply 5V±10%
2	RFCORR	O	RF correction switch signal output H : Gain UP CD, CDV-A : Low, CAV inner circuit gain up, others are High
3	MUTE	O	Audio mute control signal output of audio system L : Release MUTE H : MUTE
4	SRDMUTE	O	Mute control signal output for AC3 Release MUTE during playback. L : Release MUTE H : MUTE
5	XTLT ON	O	Tilt operation information L : During operation In the OPEN/CLOSE, the voltage will up about 10% by using this port.
6	TILTERR	I A/D	This signal is A/D converted as the tilt servo control input. Control the tilt motor so that this signal becomes 2.5V.
7	TBALERR	I A/D	Tracking balance error signal input This signal is A/D converted as the tracking offset control input.
8	SLDERR	I A/D	This signal is A/D converted as the slider servo control input. Control the tilt motor so that this signal becomes 2.5V.
9	SLDPOS	I A/D	Pickup position detection switch input Detect the position by reading A/D input value which each switches are resistance divided.
10	XFOK	I	Focus servo lock signal input L : Lock H : Unlock Use for lock detection of focus servo.
11	SINGLE	I	This information transmit to mode control by communication. L : Port high H : Port low Use for the signal mode
12	TBALDRV	O PWM	Output the tracking offset signal to PWM output, then use for auto tracking offset. 910 μsec period, tri-state control H, L, Z
13	XCD	O	LD/CD switch signal output L : CD H : LD
14	XPLAY	O	Signal output during spindle servo L : During servo H : During acceleration, brake and stop
15	SQOUT	I	Command data input from DSP Read out SUBQ
16	SO3	O	Serial 3 data signals output Serial signals are common used and signal distinguishes from the latch signals (DVPLAT and TLAT).
17	SCK3	O	Serial 3 clock signals output
18	SLDDRV	O PWM	Slider control signal output 5V=FWD, 0V=REV, 2.5V=STOP 910 μsec period, tri-state control H, L, Z

No.	Pin Name	I/O	Function
19	SI1	I	Data input from the mode control IC
20	SO1	O	Serial data output to the mode control IC
21	SCK1	I/O	Clock for serial communication with the mode control IC Becomes input mode without communicate with the mode control IC
22	TZC	I INT	Tracking error zero cross signal input Monitor this signal when searching track count in the miss clamp detection.
23	SBSY	I	Interrupt input for reading sub-code Q data from DSP
24	TILTDRV	I/O	LOAD/TILT control output 0.5V-Tray IN, OUT/Tilt DOWN, UP 2.5V-STOP Use for tilt servo that tilt drive is PWM output.
25	XANA	O	Digital/Analog audio switch signal output L : Analog H : Digital
26	XPBV	I	Playback vertical sync. signal input of LD/CDV L : During vertical sync.
27	CNVss	I	Ground for A/D conversion
28	XRESET	I	Reset signal input L : Reset H : Release reset Mode control is controlled.
29	XIN	I	9MHz clock oscillation input
30	XOUT	O	9MHz clock oscillation output
31	N.C.	O	Not used
32	GND	I	Ground
33	SW1	I	Switch input for Loading/Tilt position detection
34	SW3		
35	SW2		
36	AV1GMOD	I	AV1 gijutu mode When this port set to H, unti-shock control will be effective by Address C-bit2 from the mode control.
37	FG	I	Spindle motor FG signal input 16 outputs per rotation Used after dividing by 2 in microprocessor
38	DATA	I	Input pin for Phillips code decoder with built in mechanism controller
39	XPBH	I	Playback H-SYNC input for Phillips code decoder
40	XPBV	I	Playback V-SYNC input for Phillips code decoder
41	TURNA	I	Turn switch input H : side A L : side B
42	XSURRND	O	Surround control H : OFF L : ON
43	XVCECAN	O	Voice cancel output H : OFF L : Cancel
44	MEMORY	I	Memory model discrimination H : Memory model L : Non-memory model
45	DOCINH	O	Control the clamp pulse and clamp killer by tri-state value
46	DETPOW	I	Use for power abnormal signal input port. L : Normal H : Abnormal
47	NRINH	O	Control output of the noise reduction switch signal output L : CX ON H : CX OFF
48	REFLOCK	I	Reference signal input from DVP L : Phase not aligned H : Phase aligned (Non-memory)
49	SQ1	O	Analog audio switch signal output 1/L L : Squelch OFF H : Squelch ON
50	SQ2	O	Analog audio switch signal output 2/R L : Squelch OFF H : Squelch ON
51	XCX	O	Analog audio CX noise reduction switch signal output L: CX ON H: CX OFF
52	XFTS	O	Serial command output switch signal output of DSP/others L : DSP H : others
53	PCTLVL	O	Signal output for the picture quality adjustment L : SHARP2 (strong) H : SHARP1 (weak)
54	DVPLAT	O	PD0234 serial latch signal output Latches at falling edge.
55	TBCLOCK	I	Spindle lock signal input L : Unlock H : Lock
56	TLATCH	O	DAC & digital filter PD2026B serial control latch signal output Latches at falling edge.
57	PCTCTL	O	Outline correction signal output L : Correction OFF H : Correction ON
58	DEEMPA	O	DSP deemphasis control L : OFF H : ON
59	DETAMP	I	Spindle over-current detection signal input L : Over current H : Normal
60	FSEQ	I	Subcode sync. conformity detection signal input L : Not conformity H : Conformity
61	THOLD	I	Track jump accelerating / decelerating signal input L : other H : accelerating / decelerating
62	WRQ	I	Subcode Q reading OK signal input L : NG H : OK This pin will be H when Subcode Q data passed by CRC check.
63	RWC	O	DSP read / write command signal output L : Read H : Write
64	SHAKE	I/O	Handshake signal for data communication with the mode control IC This pin is the bilateral data line and each microprocessor control the Input / Output.

LA7134M (MOTHER ASSY : IC400)

- VIDEO IC

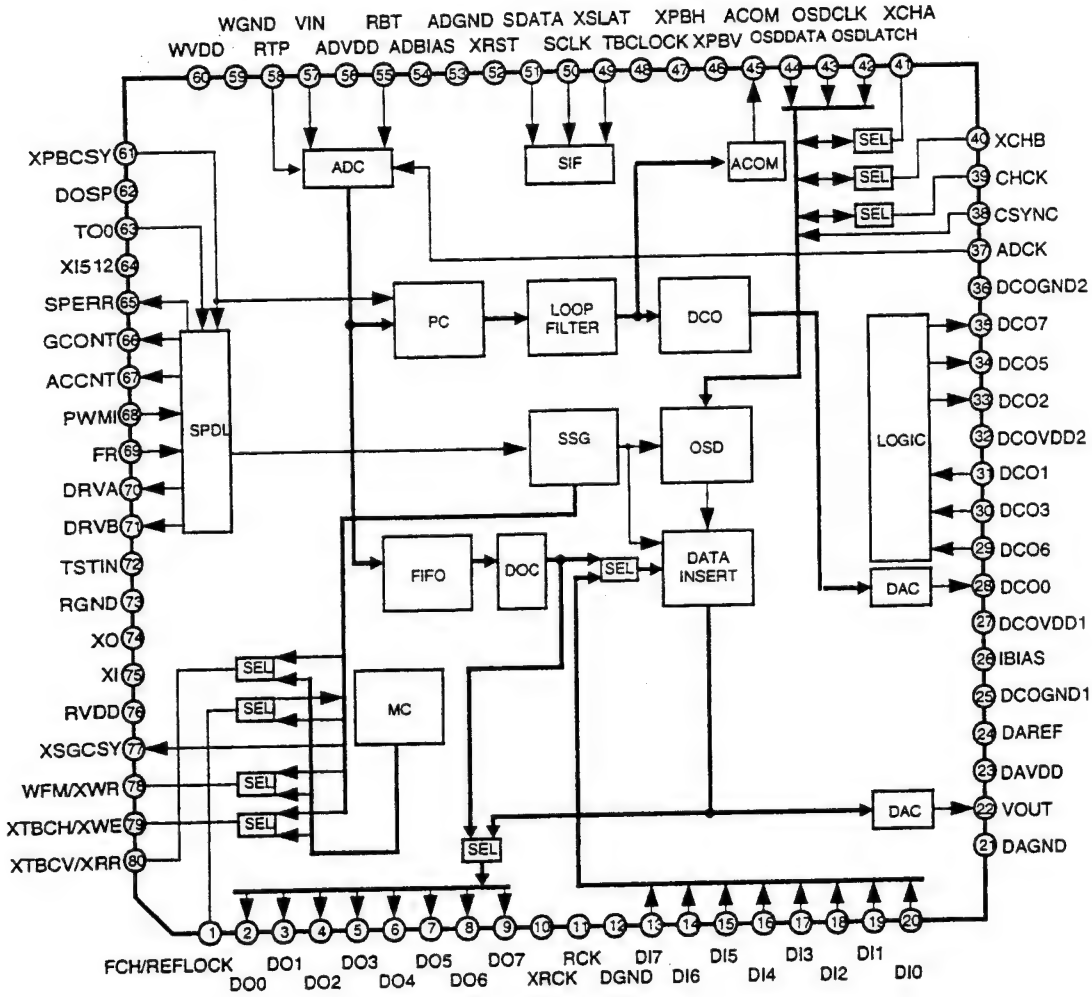
- Block Diagram



■PD0234A (MOTHER ASSY : IC500)

- **DVP**

- **Block Diagram**



• Pin Function

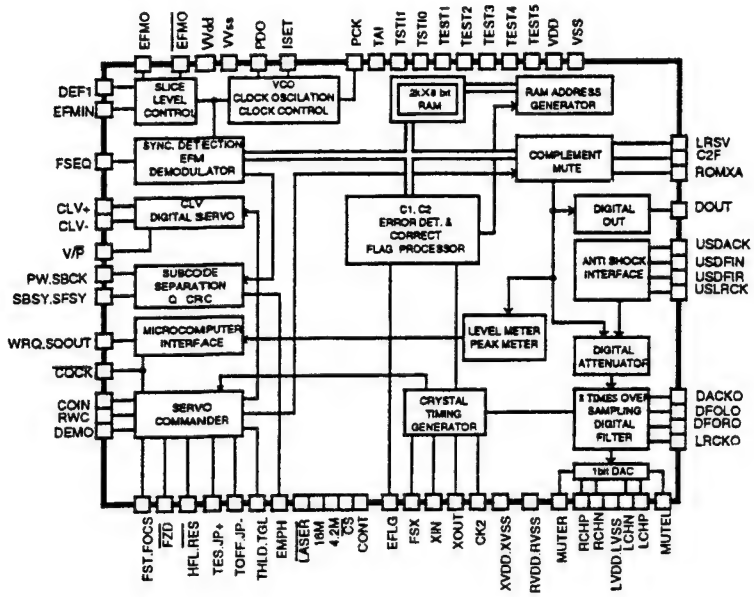
No.	Pin Name	I/O	Function	
1	FCH	I	MEMSYS:1	Switch the field of SSG by "H"
	REFLOCK	O	MEMSYS:0	Outputs "H" when the phase difference of H/V sync. signal associated with the time-base-corrected video signal and those associated with SSG is small enough.
2	DO0	O	Outputs the digital data of the time-base-corrected video signal for the memory system. When using the internal memory controller (MEMSYS:1 & EXTMC:0), output for field memory and external output are common used. Perform the data output setting with the serial command. DO7 : MSB , DO0 : LSB	
3	DO1			
4	DO2			
5	DO3			
6	DO4			
7	DO5			
8	DO6			
9	DO7			
10	XRCK	O	Inverting outputs the CLK of the reading system. When using the internal memory controller (MEMSYS:1 & EXTMC:0), phase is able to control with the serial command.	
11	RCK	O	Outputs the CLK of the reading system. When using the internal memory controller (MEMSYS:1 & EXTMC:0), phase is able to control with the serial command.	
12	DGND	—	Ground of digital system Connect to GND.	
13	DI7	I	Digital video signal input Outputs the field memory when using the internal memory controller (MEMSYS:1 & EXTMC:0) and inputs the external signal when using the external A/D. DI7 : MSB , DI0 : LSB	
14	DI6			
15	DI5			
16	DI4			
17	DI3			
18	DI2			
19	DI1			
20	DI0			
21	DAGND	—	Ground for DAC Connect to GND.	
22	VOUT	O	DAC output of the time-base-corrected video signal	
23	DAVDD	—	Power supply for DAC Connect to GND.	
24	DAREF	—	Reference pin for DAC Normally, decoupling to the DAGND through the 0.1 μF laminated ceramic capacitor.	
25	DCOGND1	—	Ground for DCO Connect to GND.	
26	IBIAS	—	Current setting pin of the bias circuit Normally, connect to DAGND through the 10kΩ resistor.	
27	DCOVDD1	—	Power supply for DCO Connect to +5V.	
28	DCO0	O	DCO output pin Outputs a fsc in synchronization with the input video signal. This signal is multiplied by 4 to produce CLK of writing system.	
29	DCO6	I	Waveform shaping input pin 6 Inputs a signal obtained by delaying the DCO5 output signal by 35 ns. (to be self biased)	
30	DCO3	I	Waveform shaping input pin 3 Inputs a signal obtained by delaying the DCO5 output signal by 70 ns. (to be self biased)	
31	DCO1	I	Waveform shaping input pin 1 Inputs a DCO0 output signal via the fsc BPF. (to be self biased)	
32	DCOVDD2	—	Power supply for output multiplied by 4 Connect to +5V.	
33	DCO2	O	Waveform shaping input pin 2 Outputs a signal obtained through waveform shaping of the DCO0 output signal.	
34	DCO5	O	Waveform shaping input pin 5 Outputs a signal multiplied by 2.	
35	DCO7	O	Waveform shaping input pin 7 Outputs a signal multiplied by 4.	
36	DCOGND2	—	Ground for output multiplied by 4 Connect to GND.	
37	ADCK	I	CLK input for writing system Inputs DCO7 output signal via a 4fsc BPF. (to be self biased)	
38	CSYNC	I	Composite sync. input for character generator When using the OSD for single (EXTMIX:1), input the composite sync. for generating the character.	
39	CHCK	I	EXTMIX :1	CLK input for character generator Inputs 2fsc.
	CHCK	O	EXTMIX :0	CLK output for character generator Outputs 2fsc.
40	XCHB	O	EXTMIX :1	Blanking signal output
	XCHB	I	EXTMIX :0	Blanking signal input Inputs "L" when inserting the blanking signal.
41	XCHA	O	EXTMIX :1	Character signal output
	XCHA	I	EXTMIX :0	Character signal input Inputs "L" when inserting the character signal.
42	OSDLATCH	I	Latch input for OSD Serial transmission of the OSD control data is able to accept by this pin set to "L".	
43	OSDCLK	I	CLK input for reading the OSD data	

No.	Pin Name	I/O	Function	
44	OSDDATA	I	Control data input for OSD Read the data in synchronization with CLK which input to OSDCLK pin.	
45	ACOM	O	Jitter correction signal output for analog audio Use for cancelling the jitter element of analog audio.	
46	XPBV	O	PB system V sync. output Outputs the signal obtained by separating V sync. signal from the signal at pin 61 (XPBCSY) with negative logic.	
47	XPBH	O	PB system H sync. output Outputs the signal obtained by separating H sync. signal from the signal at pin 61 (XPBCSY) with negative logic.	
48	TBCLOCK	O	PLL lock detection signal output Outputs "H" when the spindle loop and the TBC loop are locked.	
49	XSLAT	I	Serial interface latch input Gives the latch timing for data applied to the serial interface. Latches at "L".	
50	SCLK	I	CLK input for the serial interface SDATA value will be read at the rising edge.	
51	SDATA	I	Data input pin for the serial interface	
52	XRST	I	System reset input Input for initializing the internal register of IC with negative logic.	
53	ADGND	—	Ground for ADC Connect to GND.	
54	ADBIAS	—	NC or connect to ADGND.	
55	RBT	I	ADC bottom reference input Gives the bottom reference voltage of ADC.	
56	ADVDD	—	Power supply for ADC Connect to +5V.	
57	VIN	I	ADC input Inputs the composite video signal.	
58	RTP	I	ADC top reference input Gives the top reference voltage of ADC.	
59	WGND	—	Ground for writing system Connect to GND.	
60	WVDD	—	Power supply for writing system Connect to +5V.	
61	XPBCSY	I	Inputs the composite sync. signal of PB system with negative logic.	
62	DOSP	I	Inputs the dropout detection pulse with positive logic.	
63	TO0	I	Inputs the tracking-servo open signal with positive logic.	
64	XI512	O	Outputs a 1/512th division of the CLK of reading system.	
65	SPERR	O	PFD error output of the spindle error It outputs the result of comparison (PFD) between PBH and reading system H in tristate.	
66	GCONT	O	Spindle gain control output Outputs a PWM signal according to the serial-command specified value.	
67	ACCNT	O	Acceleration control output Tristate output of the acceleration/deceleration signal, which depends either on the forced acceleration/deceleration signal, the error detection by serial command or error detection by H sync. signal.	
68	PWMI	I	Spindle error PWM input Inputs a signal obtained through the voltage comparison between the spindle error signal which has passed through a loop filter and the chopping wave.	
69	FR	I	Spindle error direction element input Inputs a signal obtained through the voltage comparison between the spindle error which has passed through a loop filter and the destination voltage.	
70	DRVA	O	Output for driving the spindle motor driver It is applicable to either a brush or brushless motor, selection of which is by a serial command.	
71	DRVB			
72	TSTIN	I	Input for IC test Fixed to "L".	
73	RGND	—	Ground for reference system Connect to GND.	
74	XO	O	Connect the X'tal. Connect the 8fsc when using the internal memory controller (MEMSYS:1 & EXTMC:0) and the 4fsc is at others.	
75	XI	I		
76	RVDD	—	Power supply for reference system Connect to +5V.	
77	XSGCSY	O	Internal SSG composite sync. output Outputs the composite sync. signal of the internal SSG with negative logic. It can be delayed by a serial command with a specified delay duration.	
78	WFM	O	MEMSYS:1 & EXTMC:1	Field monitor output of write system Outputs "H" for the odd field.
	XWR	O	MEMSYS:1 & EXTMC:0	Write reset output Outputs a signal to initializing the writing address of field memory. Outputs "L" pulse for 1CLK on every field of write system. Connect to XWRST input of field memory.
79	XTBCH	O	MEMSYS:1 & EXTMC:1	TBC H sync. output Outputs the time-base-corrected H sync. signal with negative logic.
	XWE	O	MEMSYS:1 & EXTMC:0	Write enable output Control the writing operation of field memory. "L" for enable and "H" for disenable. Connect to XWE input of field memory.
80	XTBCV	O	MEMSYS:1 & EXTMC:1	TBC V sync output Outputs the time-base-correcter V sync. signal with negative logic.
	XRR	O	MEMSYS:1 & EXTMC:0	Read reset output Outputs a signal to initializing the reading address of field memory. Outputs "L" pulse for 1CLK on every each field of read system. Connect to XRRST input of field memory.

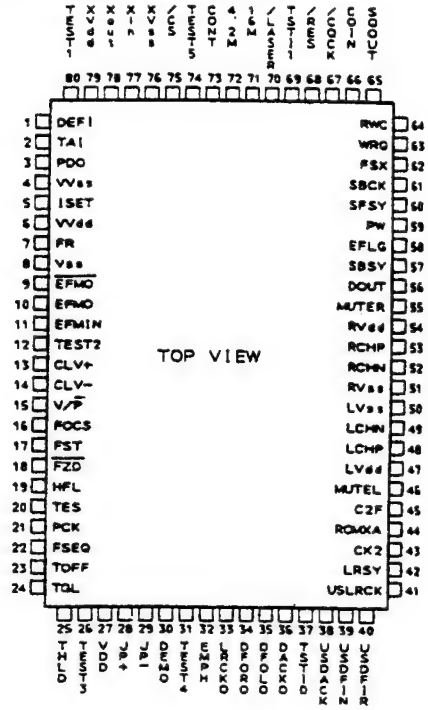
■LC78621E (MOTHER ASSY : IC802)

• SERVO CONTROLER & EFM DEMODULATOR

• Block Diagram



• Pin Arrangement (Top View)



• Pin Function

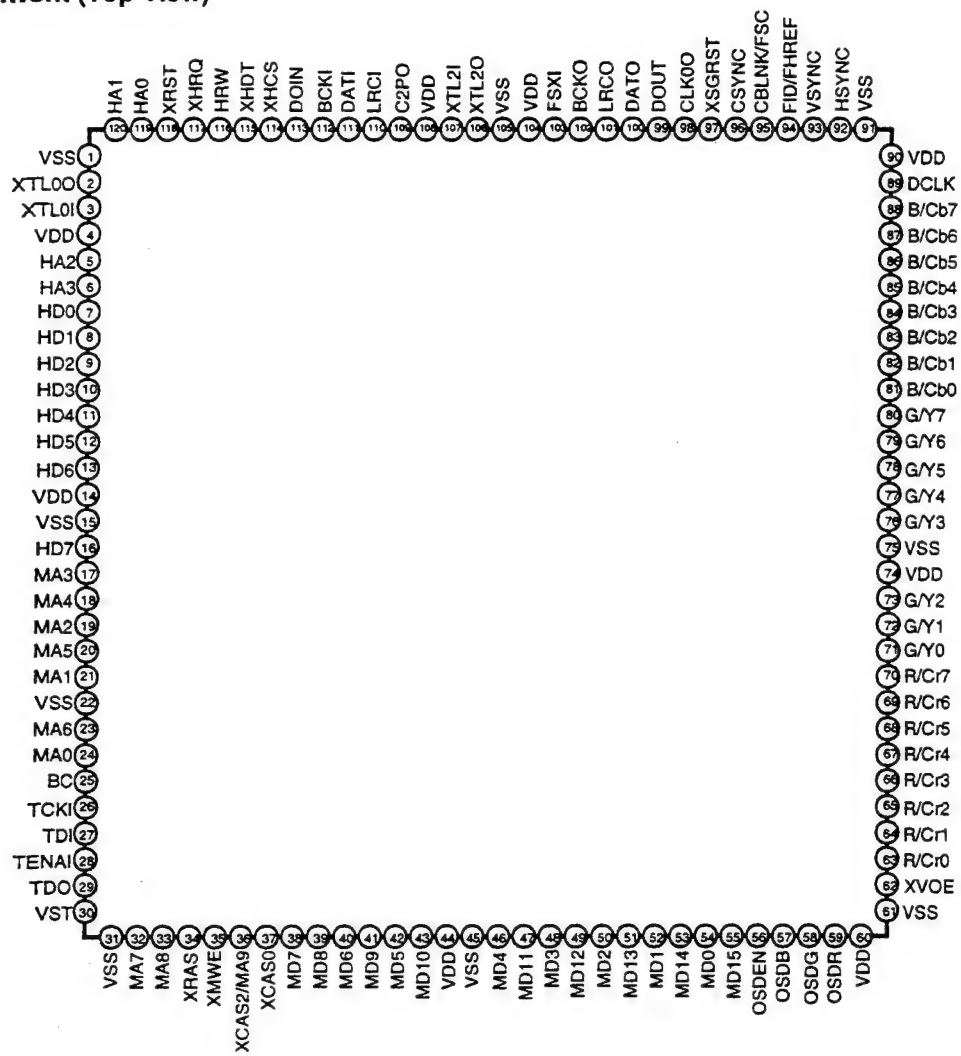
No.	Pin Name	I/O	Function	
1	DE-FI	I	Defect detection signal (DEF) input pin ("L" at not used)	
2	TAI	I	For PLL	Test input pin with pull-down resistor
3	PDO	O		Phase comparison output for controlling the external VCO
4	V Vss	—		Power supply for PLL and internal VCO Normally, 0V.
5	ISET	AI		Connect a resistor for current adjustment of PDO output
6	V VDD	—		Ground for internal VOO Normally, 5V.
7	FR	AI		For VCO frequency range adjustment
8	Vss	—	Ground for digital system Normally, 0V.	
9	EFMO	O	For slice level control	EFM signal inversion output
10	EFMO	O		EFM signal output
11	EFMIN	I		EFM signal input
12	TEST2	I	Test input pin with pull-down resistor	
13	CLV+	O	Output pin for controlling the spindle servo Acceleration for CLV+ is "H" and Deceleration for CLV- is "H".	
14	CLV-	O	Tristate output is able to output with command	
15	V/P	O	Automatic switching monitor output of rough servo/phase control H : Rough servo , L : Phase control mode	
16	FOCS	O	Output pin for focus servo ON/OFF Focus servo ON for "L"	
17	FST	O	Focus start pulse output (open drain output)	
18	F2D	I	Focus error zerocross signal input ("L" at not used)	
19	HFL	I	Track detection signal input (schmitt input)	
20	TES	I	Tracking error signal input (schmitt input)	
21	PCK	O	Clock monitor output for EFM data playback (4.3218MHz at phase clock)	
22	FSEQ	O	Sync. signal detection output Becomes "H" when the sync. signals between the detected sync. signal from EFM signal and internal generated sync. signal are aligned.	
23	TOFF	O	Tracking OFF output	
24	TGL	O	Output pin for output tracking gain switch Gain up for "L".	
25	THLD	O	Tracking hold output	
26	TEST3	I	Test input pin with pull-down resistor	

No.	Pin Name	I/O	Function
27	VDD		Power supply for digital system Normally, 5V.
28	JP+	O	Output pin for track jump When JP+ is "H" , Acceleration in the outer direction jump or Deceleration in the inner direction jump. When JP- is "H" : Acceleration in the inner direction jump or deceleration in the outer direction jump. Tristate output is able to output with the bcommand.
29	JP-		
30	DEMO	I	Sound output function input for the player adjustment with pull-down resistor
31	TEST4	I	Test input pin with pull-down resistor
32	EMPH	O	Deemphasis monitor output H : during playback the deenphasis disc
33	LRCKO	O	Digital filter output — Word clock output
34	DFORO		Digital filter output — R ch data output
35	DFOLO		Digital filter output — L ch data output
36	DACKO		Digital filter output — Bit clock output
37	TST10	O	Test output pin Open (Normally, output "L")
38	USDACK	I	Antishock correspondence input ("L" at not used) — Bit clock input
39	USDFIN		Antishock correspondence input ("L" at not used) — L ch and R ch data
40	USDFIR		Antishock correspondence input ("L" at not used) — Test input pin Normally, "L".
41	USLRCK	I	Antishock correspondence Input word clock input ("L" at not used)
42	LRSY	O	ROMXA correspondence output — L/R clock output
43	CK2		ROMXA correspondence output — Bit clock output / DACLK (at RES) / Polarity inversion (CK2COK mode)
44	ROMXA		ROMXA correspondence output — Data output / Data (complement) (at RES) / ROMOUT (ROMXA mode)
45	C2F		ROMXA correspondence output — C2 flag output
46	MUTEL	O	For1bit DAC — Mute output
47	L VDD		For1bit DAC — Power supply for L ch Normally, 5V.
48	LCHP	O	For1bit DAC — L ch P output
49	LCHN	O	For1bit DAC — L ch N output
50	LVSS		For1bit DAC — Ground for L ch Normally, 0V.
51	RVSS		For1bit DAC — Ground for R ch Normally, 0V.
52	RCHN	O	For1bit DAC — R ch N output
53	RCHP	O	For1bit DAC — R ch P output
54	RVDD		For1bit DAC — Power supply for R ch Normally, 5V.
55	MUTER	O	For1bit DAC — Mute output
56	DOUT	O	Digital OUT output
57	SBSY	O	Perion signal output of subcode block
58	EFLG	O	Correction monitor output of C1, C2, single and double
59	PW	O	Subcode P, Q, R, S, T, U and W output
60	SFSY	O	Period signal output of subcode frame Rise down when the subcode is stndbyed.
61	SBCK	I	Subcode reading clock input (schmitt input)
62	FSX	O	7.35kHz sync. signal output which is divided the frequency from the crystal resonator.
63	WRQ	O	Standby output of subcode Q output
64	RWC	I	Read / Write control input
65	SQOUT	O	Subcode Q output
66	COIN	I	Command input from the microcomputer
67	CQCK	I	Command input take in clock or subcode take out clock input from SQOUT (schmitt input)
68	RES	I	Chip reset input Once turn to "L" at the power ON
69	TST11	O	Test input pin Open (Normally, output "L")
70	LASER	O	Laser ON/OFF output Control with the serial data command from the microcomputer
71	16M	O	16.9344MHz output However, output 33.8688MHz in the fourfold speed playback mode.
72	4.2M	O	4.2336MHz output
73	CONT	O	Auxiliary output Control with the serial data command from the microcomputer.
74	TEST5	I	Test input pin with pull-down resistor
75	CS	I	Chip select input with pull-down resistor
76	XVSS		Ground for the crystal resonator Normally, 0V.
77	XIN	I	Connect the 16.9344MHz crystal resonator.
78	XOUT	O	Connect the 33.8688MHz crystal resonator in the fourfold speed playback system.
79	XVDD		Power supply for the crystal resonator Normally, 5V.
80	TEST1	I	Test input pin with pull-down resistor

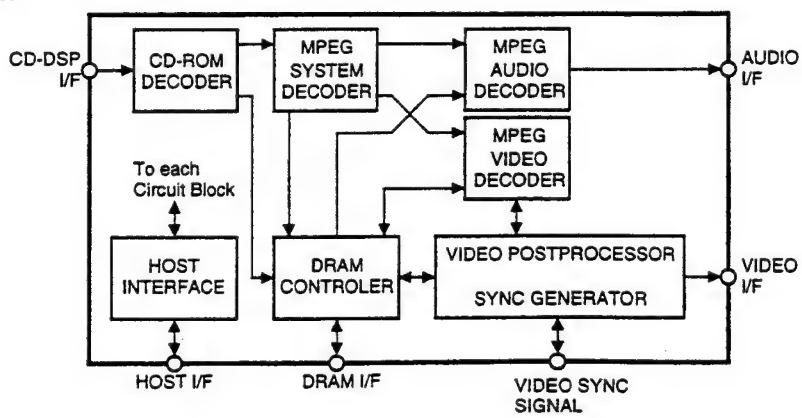
■ CXD1852Q (VCDB ASSY : IC101)

• MPEG1 DECODER

• Pin Assignment (Top View)



• Block Diagram



• Pin Function

No.	Pin Name	I/O	Function
1	VSS	—	Connect to ground
2	XTL0O	O	Master clock of video decoder Clock input to XTL0I or connect a oscillator between XTL0I and XTL0O. Frequency is 27MHz, 28.6363MHz (NTSC 8fsc), 35.4686MHz (PAL 8fsc).
3	XTL0I	I	
4	VDD	—	+3.3V power supply
5	HA2	I	When host interface is parallel mode, HA0-HA3, become register address input pins. When host interface is serial mode, HA0 becomes serial data input pin, and HA1-HA3 are fixed to "L" level.
6	HA3		
7	HD0	I/O	When host interface is parallel mode, HD0-HD7, become register data input/output pins. When host interface is serial mode, HD0 becomes serial data output pin, and HD1-HD7 are fixed to "L" level.
8	HD1		
9	HD2		
10	HD3		
11	HD4		
12	HD5		
13	HD6		
14	VDD	—	+3.3V power supply
15	VSS	—	Connect to ground
16	HD7	I/O	When host interface is parallel mode, HD0-HD7, become register data input/output pins. When host interface is serial mode, HD0 becomes serial data output pin, and HD1-HD7 are fixed to "L" level.
17	MA3	O	DRAM address signal output Connect to DRAM address pins agree with number.
18	MA4		
19	MA2		
20	MA5		
21	MA1		
22	VSS	—	Connect to ground
23	MA6	O	DRAM address signal output Connect to DRAM address pins agree with number.
24	MA0		
25	BC	—	Test pin Set to open.
26	TCKI		
27	TDI		
28	TENAI		
29	TDO		
30	VST	—	Test pin Connect to ground.
31	VSS	—	Connect to ground
32	MA7	O	DRAM address signal output Connect to DRAM address pins agree with number.
33	MA8		
34	XRAS	O	Low address strobe signal output Connect to $\overline{RAS}$ signal pin of DRAM.
35	XMWE	O	Write enable signal output of DRAM Connect to $\overline{WE}$ signal pin of DRAM.
36	XCAS2/MA9	O	Use for when connecting the 8 bit DRAM When construction of DRAM is 256kw×16bit×2, connect to $\overline{CAS}$ signal pin of upper word (256k-512k-1) side DRAM (upper and lower bytes are common used). When DRAM is 512kw×8bit×2, connect to MA9 pin (two DRAMs).
37	XCAS0	O	Column address strobe signal output of DRAM. When construction of DRAM is 256kw×16bit×2, connect to $\overline{CAS}$ signal pin of lower word (0-256k-1) side DRAM (upper and lower bytes are common used). In other case, connect to all $\overline{CAS}$ signal pins of DRAM.
38	MD7	I/O	Data signal input/output of DRAM Connect to DRAM data pins agree with number.
39	MD8		
40	MD6		
41	MD9		
42	MD5		
43	MD10		
44	VDD	—	+3.3V power supply
45	VSS	—	Connect to ground

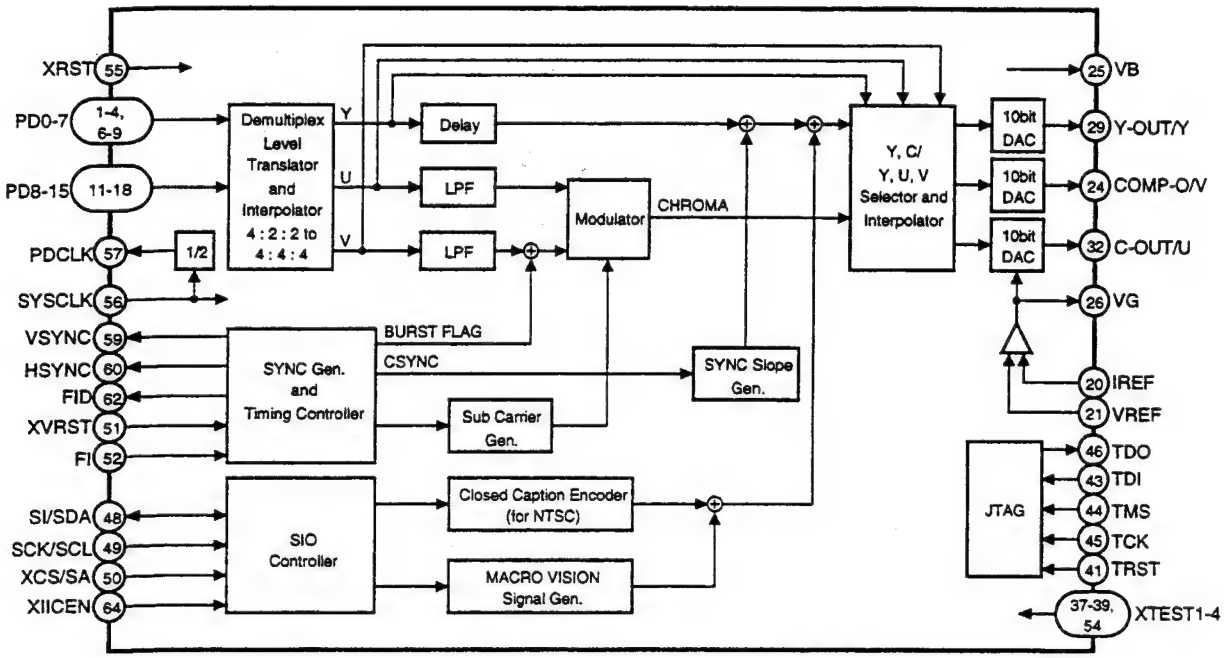
No.	Pin Name	I/O	Function
46	MD4	I/O	Data signal input/output of DRAM Connect to DRAM data pins gree with number.
47	MD11		
48	MD3		
49	MD12		
50	MD2		
51	MD13		
52	MD1		
53	MD14		
54	MD0		
55	MD15		
56	OSDEN	I	OSD enable signal Polarity of enable is changed by register setting.
57	OSDB	I	OSD data input When input signal which input to OSDEN is enable state, entered color in the color table which setting with there inputs (3 bit) is output to the picture data.
58	OSDG		
59	OSDR		
60	VDD	—	+3.3V power supply
61	VSS	—	Connect to ground
62	XVOE	I	Video output enable signal pin L : Picture data output and DCLK output are enabled. H : Disable (High impedance)
63	R/Cr0	O	Picture data output Correspondence of output data format (RGB, YCbCr etc.) and output data are able to changed by register setting.
64	R/Cr1		
65	R/Cr2		
66	R/Cr3		
67	R/Cr4		
68	R/Cr5		
69	R/Cr6		
70	R/Cr7		
71	G/Y0		
72	G/Y1		
73	G/Y2		
74	VDD	—	+3.3V power supply
75	VSS	—	Connect to ground
76	G/Y3	O	Picture data output Correspondence of output data format (RGB, YCbCr etc.) and output data are able to changed by register setting.
77	G/Y4		
78	G/Y5		
79	G/Y6		
80	G/Y7		
81	B/Cb0		
82	B/Cb1		
83	B/Cb2		
84	B/Cb3		
85	B/Cb4		
86	B/Cb5		
87	B/Cb6		
88	B/Cb7		
89	DCLK	I/O	Dot clock (DCLK) signal pin Normally, DCLK frequency is 13.5MHz. DCLK is able to input from this pin and output from this pin by dividing from clock input.
90	VDD	—	+3.3V power supply

No.	Pin Name	I/O	Function
91	VSS	—	Connect to ground
92	HSYNC	I/O	Horizontal sync. signal pin When internal sync. generator is used, outputs dot clock (DCLK) by frequency divided. When internal sync. generator is not used, it becomes input.
93	VSYNC	I/O	Vertical sync. signal pin When internal sync. generator is used, outputs dot clock (DCLK) by frequency divided. When internal sync. generator is not used, it becomes input.
94	FID/FHREF	I/O	Field discrimination signal (FID) and horizontal sync. phase reference signal (FHREF) pin Set this pin by register setting. When set to FID, outputs by using the internal sync. generator and inputs by not using it. "H" is correspond to odd field. When set to FHREF, outputs signal divided by XTL0. When XTL0 is 8fsc, signal becomes suitable HSYNC period and we for phase compare with HSYNC signal.
95	CBLNK/FSC	I/O	Composite blanking signal (CBLNK) and fsc signal pin Set this pin by register setting. When set to CBLK, outputs by using the internal sync. generator and inputs by not using it. When set to fsc, outputs signal divided by XTL0. Divided ratio is able to selected 1/8 or 1/16.
96	CSYNC	O	Composite sync. signal pin divided by DCLK. Signal is not able to input.
97	XSGRST	I	Reset signal input of sync. generator "L" for initialize the internal sync. generator.
98	CLK0O	O	Outputs clock divided by XTL0 Divided ratio is able to selected 1/8 or 1/16.
99	DOUT	O	Audio digital output
100	DATO	O	Audio serial data output to DAC
101	LRCO	O	L/R clock output to DAC
102	BCKO	O	Bit clock output to DAC
103	FSXI	I	Clock input for audio interface Input 256fs (11.2896MHz), 384fs (16.9344MHz), 512fs (22.5792MHz) and 768fs (33.8688MHz).
104	VDD	—	+3.3V power supply
105	VSS	—	Connect to ground
106	XTL2O	O	Master clock of CD-ROM decoder and audio decoder Clock input to XTL2I or connect a oscillator between XTL2I and XTL2O. Frequency is 45MHz. This clock is for internal circuit, then not synchronize the input and output.
107	XTL2I	I	
108	VDD	—	+3.3V power supply
109	C2PO	I	C2 pointer input from CD-DSP Indicate the error of DATI input.
110	LRCI	I	LR clock input from CD-DSP Indicate the L ch and R ch of DATI.
111	DATI	I	Serial data input from CD-DSP
112	BCKI	I	Bit clock input from CD-DSP Clock for strobe the DATI input.
113	DOIN	I	Digital data input from CD-DSP
114	XHCS	I	Chip select signal input at register access
115	XHDT	I/O	Wait signal output at register access When host interface is pararell mode only, this pin is effective. Use to pull-up for open drain operation. In the serial mode, use to pull-up.
116	HRW	I	When host interface is parallel mode, this pin becomes $\overline{R}$/W signal input. When host interface is serial mode, it becomes serial clock input.
117	XHIRQ	O	Interrupt request signal output Use to pull-up for open drain operation.
118	XRST	I	Hardware reset signal input When this pin set to "L", initialize the all operation.
119	HA0	I	When host interface is parallel mode, HA0-HA3, become register address input pins. When host interface is serial mode, HA0 becomes serial data input pin, and HA1-HA3 are fixed to "L" level.
120	HA1		

■ CXD1913Q (VCDB ASSY : IC301)

• DIGITAL VIDEO ENCODER

• Block Diagram



• Pin Function

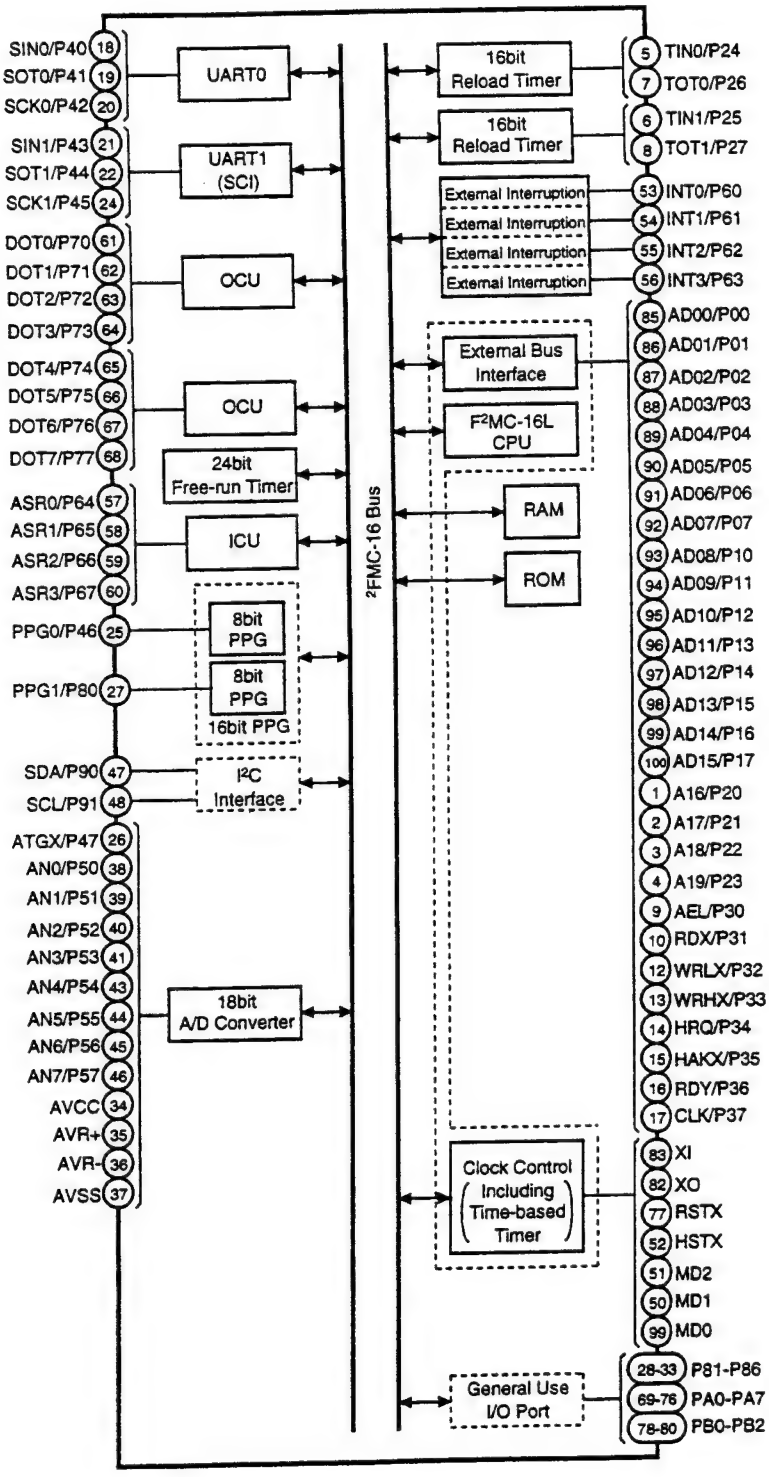
No.	Pin Name	I/O	Function
1	PD7	I	8bit pixel data input When PIF MODE = 0, input for Y, Cb and Cr signals which are multiplexed. When PIF MODE = 1, input for Y signal.
2	PD6		
3	PD5		
4	PD4		
5	VSS	—	Ground for digital
6	PD3	I	8bit pixel data input When PIF MODE = 0, input for Y, Cb and Cr signals which are multiplexed. When PIF MODE = 1, input for Y signal.
7	PD2		
8	PD1		
9	PD0		
10	VDD	—	Power supply for digital
11	PD15/TD7	I/O	8bit pixel data input/test data bus When PIF MODE = 0, there pins are not able to we. When PIF MODE = 1, input for Cb and Cr signals which are multiplexed. In the test mode, use for the internal circuit test data bus. Test mode is opened for device vender only.
12	PD14/TD6		
13	PD13/TD5		
14	PD12/TD4		
15	PD11/TD3		
16	PD10/TD2		
17	PD9/TD1		
18	PD8/TD0		
19	VSS	—	Ground for digital
20	IREF	I	Reference current input Connect a 16-times resister ("16R") of output resistor value "R" .
21	VREF	I	Reference voltage input Set the output full scale.
22	AVDD1	—	Power supply for analog
23	AVSS1	—	Ground for analog
24	COMP-O/V	O	10bit D/A converter output When YC/YUV = 1, outputs conposite signal. When YC/YUV = 0, outputs color-difference (V) signal.
25	VB	O	Connect a about 0.1μF capacitor to VSS.
26	VG	O	Connect a about 0.1μF capacitor to AVDD.
27	AVDD2	—	Power supply for analog
28	AVSS2	—	Ground for analog
29	Y-OUT/Y	O	10bit D/A converter output Outputs luminance (Y) signal.
30	AVDD3	—	Power supply for analog
31	AVSS3	—	Ground for analog
32	C-OUT/U	O	10bit D/A converter output When YC/YUV = 1, outputs chroma (C) signal. When YC/YUV = 0, outputs color-difference (U) signal.

No.	Pin Name	I/O	Function
33	TD10	I/O	Test data bus Set to open. In the test mode, we for the internal circuit test data bus. Test mode is opened for device vender only.
34	VDD	—	Power supply for digital
35	TD9	I/O	Test data bus Set to open. In the test mode, we for the internal circuit test data bus. Test mode is opened for device vender only.
36	TD8		
37	XTEST1	I	Test mode control input with pull-up When these pins are "H", CXD1910AQ is not test mode. Test mode is opened for device vender only.
38	XTEST2		
39	XTEST3		
40	VSS	—	Ground for digital
41	TRST	I	Reset signal input for JTAG of active "L" with pull-up.
42	VDD	—	Power supply for digital
43	TDI	I	Serial data input for JTAG with pull-up
44	TMS	I	Control signal input for JTAG with pull-up
45	TCK	I	Clock input for JTAG
46	TDO	O	Serial data output for JTAG
47	VSS	—	Ground for digital
48	SI/SDA	I	This pins function is selected by XIICEN (pin 64). When XIICEN is "H", it becomes SONY SIO mode and SI serial data input. When XIICEN is "L", it becomes I²C-BUS mode and SDA input/output.
49	SCK/SCL	I	This pins function is selected by XIICEN (pin 64). When XIICEN is "H", it becomes SONY SIO mode and SCK serial clock input. When XIICEN is "L", it becomes I²C-BUS mode and SCL input.
50	XCS/SA	I	This pins function is selected by XIICEN (pin 64). When XIICEN is "H", it becomes SONY SIO mode and XCS chip select input. When XIICEN is "L", it becomes I²C-BUS mode and SA slave address selection input signal which selecting slave address of I²C-BUS.
51	XVRST	I	Vertical sync. reset input of active "L" with pull-up Use for synchronize the external and internal vertical sync. When XVRST is "L", reset the internal digital sync. generator according to FI.
52	FI	I	Field ID input Indicates the field ID at vertical sync. reset. H : 1st field L : 2nd field
53	VDD	—	Power supply for digital
54	XTEST4	I	Test mode control input with pull-up When these pins are H, CXD1910AQ is not test mode. Test mode is opened for device vender only.
55	XRST	I	System reset input at active "L" "L" for more than 40 clocks (SYSCLK) at power on reset.
56	SYSCLK	I	System clock input It needs to correctly 27MHz for generating the correctly sub-carrier frequency.
57	PDCLK	O	Pixel data clock output for 13.5MHz This clock is SYSCLK divided by 2. Use for 16bit pixel data mode.
58	VSS	—	Ground for digital
59	VSYNC	O	Vertical sync. signal output
60	HSYNC	O	Horizontal sync. signal output
61	SO	O	This pin's function is selectedby XIICEN (pin 64). When XIICEN is "H", it becomes SONY SIO mode and SO serial out output. When XIICEN is "L", this pin is not used and output becomes Hi-impedance.
62	FID	O	Field ID output When FIDS = 1, L : 1st field, H : 2nd field. When FIDS = 0, H : 1st field, L : 2nd field.
63	VDD	—	Power supply for digital
64	XIICEN	I	Serial interface mode selection input with pull-up When this pin is "L", pins 48 to 50 and 61 become I²-C-BUS mode. When this pin is "H", pins 48 to 50 and 61 become SONY SIO mode.

■ PD6193A9 (VCDB ASSY : IC501)

• VCD CONTROL IC

• Block Diagram



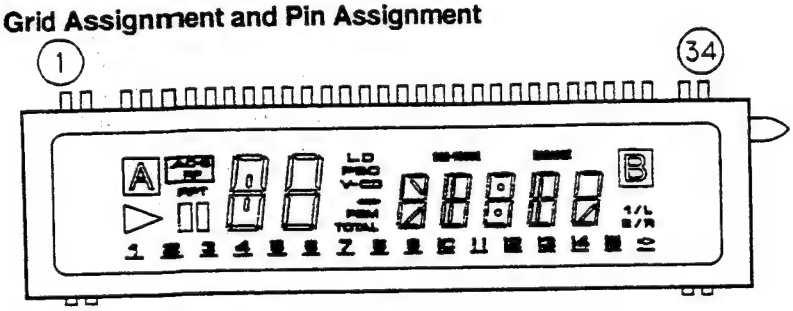
• Pin Function

No.	Pin Name	I/O	Function
1	P20	I	Not used (+5V)
2	P21		
3	P22		
4	P23		
5	P24		
6	P25		
7	P26		
8	P27		
9	P30		
10	P31		
11	VSS	—	GND
12	P32	I	Not used (+5V)
13	P33		
14	P34		
15	P35		
16	P36		
17	P37		
18	SIN0	I	Serial data input
19	SOT0	O	Serial data output
20	P42	I	Not used (+5V)
21	SINC	I	Serial communication (data input)
22	SOUTB	O	Serial communication (data output)
23	VCC	I	Power supply (+5V)
24	SCKB	O	Serial communication (clock)
25	CSM	O	Communication device selection (CXD1852)
26	CSV	O	Communication device selection (CXD1913)
27	BUSW	O	Communication device selection (system controller)
28	RSTM	O	Reset (CXD1852)
29	RSTV	O	Reset (CXD1913)
30	LD/VCD	O	Select the player output screen H : Player screen L : VCD screen
31	NTSC/PAL	O	Reserve pin (+5V)
32	P85		
33	P86		
34	AVCC	I	Power supply (+5V)
35	AVR+	I	Reference voltage of analog circuit (+5V)
36	AVR-	I	Reference voltage of analog circuit (GND)
37	AVSS	—	GND
38	P50	I	Not used (+5V)
39	P51		
40	P52		
41	P53		
42	VSS	—	GND
43	P54	I	Not used (+5V)
44	P55		
45	P56		
46	P57		
47	P90	I/O	Not used (+5V)
48	P91		
49	MD0	I	Operation mode setting (connect to +5V)
50	MD1		
51	MD2	I	Operation mode setting (connect to GND)
52	HSTX	I	N.C.
53	TVSYNC	I	Video vertical sync. signal interruption
54	IRQM	I	CXD1852 interruption
55	REQACK	I/O	Serial communication (REQ/ENB)
56	INT3	I	Not used (+5V)
57	OSD MODE	I	H : Color L : Monochrome (connect to +5V)
58	P65	I	Not used (+5V)
59	P66		
60	COLOR BAR	I	L : Color-bar display
61	P70	I	Reserve pin (+5V)
62	P71		
63	P72		
64	P73		
65	P74		
66	P75		
67	P76		
68	P77		
69	PA0	I	Not used (+5V)
70	PA1		
71	PA2		
72	PA3		
73	PA4		
74	PA5		
75	PA6		
76	PA7		
77	XRST	I	External reset request input
78	PB0	I	Not used (+5V)
79	PB1		
80	PB2		
81	VSS	—	GND
82	X0	I	Pins for crystal oscillator (4MHz)
83	X1	O	
84	VCC	I	Power supply (+5V)
85	P00	I	Not used (+5V)
86	P01		
87	P02		
88	P03		
89	P04		
90	P05		
91	P06		
92	P07		
93	P10		
94	P11		
95	P12		
96	P13		
97	P14		
98	P15		
99	P16		
100	P17		

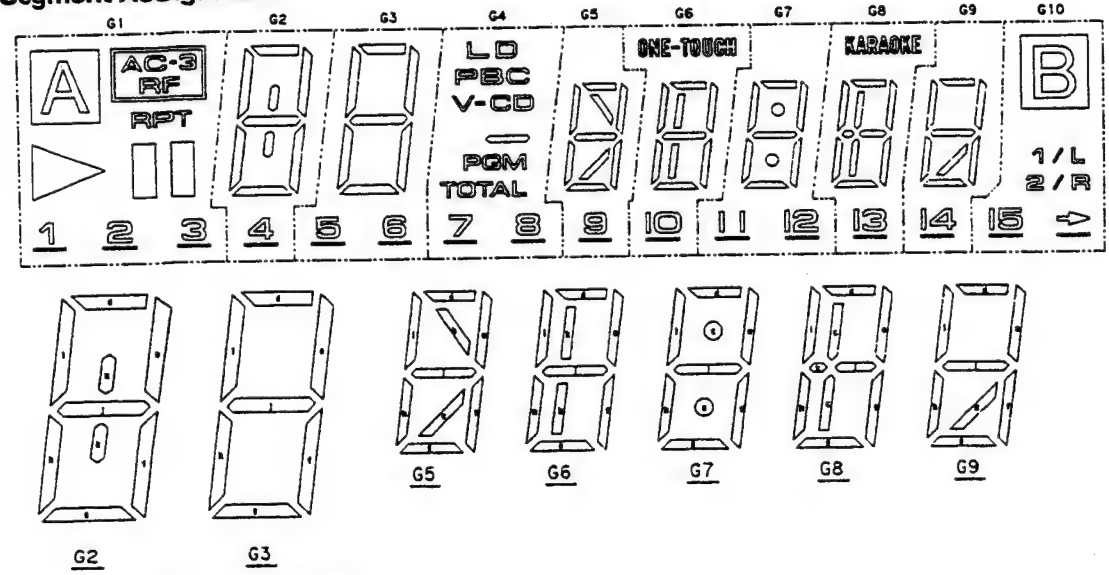
7.1.2 DISPLAY

■ VAW1044 (FLKY ASSY : V101)

- **FL TUBE**
- **Grid Assignment and Pin Assignment**



- **Segment Assignment**



- **Anode and Grid Assignment**

	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10
P1	1	4	5	7	9	10	11	13	14	15
P2	2		6	8	b	ONE-TOUCH	12	KARAOKE		⇨
P3	3				c		:	c		
P4	A	d	d	LD	d	d	d	d	d	B
P5	▷	e	e	PBC	e	e	e	e	e	1/L
P6	▯▯	f	f	V-	f	f	f	f	f	2/R
P7	RPT	g	g	CD	g	g	g	g	g	
P8	AC-3 RF	h	h	-	h	h	h	h	h	
P9		i	i	PGM	i	i	i	i	i	
P10		j	j	TOTAL	j	j	j	j	j	
P11		k				k		k	k	

- **Pin Assignment**

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Assignment	F	F	NP	NL	NL	NL	NL	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10

Pin No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Assignment	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	NL	NL	NL	NP	F	F

F : Filament G1 – G10 : Grid P1 – P11 : Anode NP : No Pin NL : No Lead

7.2 DIAGNOSIS

7.2.1 SELF-DIAGNOSTIC FUNCTION

(1) SELF-DIAGNOSTIC FUNCTION

The self-diagnostic functions automatically display an error code on the TV screen and front panel fluorescent display section when there is an error. The customer checks the error code and conveys it to the service personnel to make repairs more efficient.

After an error occurs, even if the error code goes off, you can display the error code again by holding down the CLEAR key for 5 seconds (except a loading error L ∗ display). At that time, partial error is displayed with the mechanism switch information. However, if the power cord is unplugged, the error code information is lost.

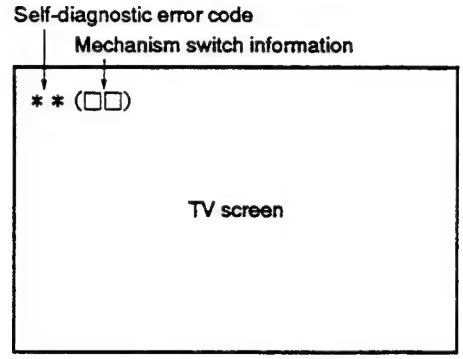


Fig. 1 TV screen display

This table explains the information for analyzing the cause when an error occurs with the CLD player.

Self-diagnostic error code	Contents	Conditions	Probable cause
H0	Spindle overcurrent detection error.	In the play state, overcurrent was detected in the spindle motor. Monitoring starts 5 seconds after the start of play or special playback mode, this error is detected if the overcurrent port is "L" for 4 seconds.	•Motor NG •Clamper rubbing
U0	FG abnormality error	①At LD start-up, the rate of rotation calculated from the FG was less than 15 rpm for 5 consecutive seconds from the spindle run command. ②At CD start-up, there was less than 1/8th rotation even after 5 seconds had passed since the end of acceleration. ③During play search, CD : subcordes are being read/LD : Phillips codes are being read and the spindle is locked, but a state in which the rate of rotation calculated from the FG was less than 15 rpm continued for 5 seconds or more. In the above case, it is judged that an abnormality has occurred in the FG sensor and that accurate rotation rate calculation has become impossible.	•FG sensor abnormality, FG signal not coming to mechanism controller •FG sensor clogged •Rubbing between FG sensor and slit •Turntable dropped •FG slit deposition NG
H1	Partial short error	①At LD start-up, the speed did not reach 1200 rpm within a certain time (12 seconds) after the spindle run command. ②At CD start-up, a certain speed (313 rpm) was not reached within 6 seconds from the end of spindle acceleration.	•Spindle motor NG •Commutator NG •Bearing too tight •Power supply NG
H2 A0	Power supply abnormality error	− 5V power supply abnormality detected. The power supply abnormality port is constantly monitored and if its signal stays high for about 1 second consecutively, the power supply is judged to be abnormal.	•− 5V not fed from POWER SUPPLY assy •Parts shorted
L ∗	Loading error	①When loading operation goes over time (approx. 10 sec.). ②When assist at disc sense entry ends and is not tilt neutral. ③When assist at set up entry ends and is not tilt neutral.	•Tilt switch 1, 2, 3 abnormal, so tilt/loading state not read in correctly •Tilt/loading mechanism mechanically locked •Drive IC NG •Power supply NG
E ∗	Slider error	During slider movement, a time over-run occurred (track count search 20 seconds, mandatory movement 10 seconds)	•Slider ceased being able to run •The slider mechanism is mechanically locked and can no longer move to its target. •Slider position switch NG •Flexible cable pulled out •Drive IC NG •Power supply abnormal
U1	Miss clamp error	①During LD setup, after 1/8th rotation, the track count during 1/8 rotation exeeded 511. ②During start-up, the focus was lost once and refocusting was attempted, but the focus could not be locked. ③Two FG pulses did not come within 800 ms from from the start of LD start-up. ④The disc clamp operation did not end within 5 seconds.	•Disc sandwiched •Disc shifted •Spindle motor NG •Disc scratched or dirty defocused during start-up •Two discs loaded •PU actuator NG •Tilt sensor NG •Tilt neutral NG (tilt base NG)

Self-diagnostic error code	Contents	Conditions	Probable cause
P ∗	Spindle error	①During TOC reading with an LD, the spindle servo was not locked within 60 seconds from the start of the spindle run. ②When CAV/CLV determination is not finished within 60 seconds from spindle servo lock. ③The codes could not be read for 10 – 15 seconds consecutively for an LD or 7 – 10 seconds for a CD/CDV and the spindle servo was not locked. ④The speed exceeded 2100 rpm during LD start up.	P0 :•PH code, SUB-Q code can not be read •VCO, PLL offset out of adjustment •Disc defect P5:•PAL disc, mirror disc, etc. PLAY •No RF P8:•Spindle servo does not lock •Spindle motor NG
F ∗	Focus error	①"In the "no disc" state, a setup command was received from the mode controller. ②When LD is out of focus when slider is moved to starting position during set up. In case of CD/CDV is NG even after three focus tries. ③During start-up, the maximum slider servo duty continued for 3 loops or more.	F5 :•CD, LD on top of each other •LD scratched or dirty defocused during slider movement •Disc NG •Slider position switch NG F6 :•Inner edge of disc scratched or dirty •Slider ran into inner edge mechanical stopper
J1	VCD μCOM communi-cation error	Communication error between the microcomputer (IC501) on the VCDB Assy and the mode control IC.	•Wire break of communication line (connector CN101 NG) •Power supply NG •VCD microcomputer (IC501) NG •Communication line buffer IC (IC601) NG
J2	VCD μCOM communi-cation error	Communication error between the microcomputer (IC501) on the VCDB Assy and the VCD decoder (IC101).	•VCD microcomputer (IC501) NG •Communication line buffer IC (IC601) NG •Buffer IC (IC602, IC603) NG •MPEG decoder IC (IC101) NG
J3	VCD μCOM communi-cation error	Communication error between the microcomputer (IC501) on the VCDB Assy and the video encoder (IC301).	•VIDEO encoder IC (IC301) NG •Wire break of communication line between IC501 and IC301

∗ Besides the above errors, there is the "U2" communications error (the mode controller could not communicate normally with the mechanism controller)
The probable cause is a defective mechanism controller, disconnected cable, etc..

∗ Mechanism mode contents (meanig of ∗ for L ∗ etc.)

0 : Play
1 : Open
2 : Standby
3 : Clamp
4 : Disc sense
5 : Setup (rotation start)
6 : TOC read
7 : Play
8 : Search
9 : Side A → Side B
A : Side B → Side A

(2) FORMAT OF THE MECHANISM SWITCH INFORMATION WHICH IS TRANSMITTED TO THE MODE CONTROL IN THE ERROR OCCURRENCE

Hexadecimal number system	Binary number system
0	0 0 0 0
1	0 0 0 1
2	0 0 1 0
3	0 0 1 1
4	0 1 0 0
5	0 1 0 1
6	0 1 1 0
7	0 1 1 1
8	1 0 0 0
9	1 0 0 1
A	1 0 1 0
B	1 0 1 1
C	1 1 0 0
D	1 1 0 1
E	1 1 1 0
F	1 1 1 1

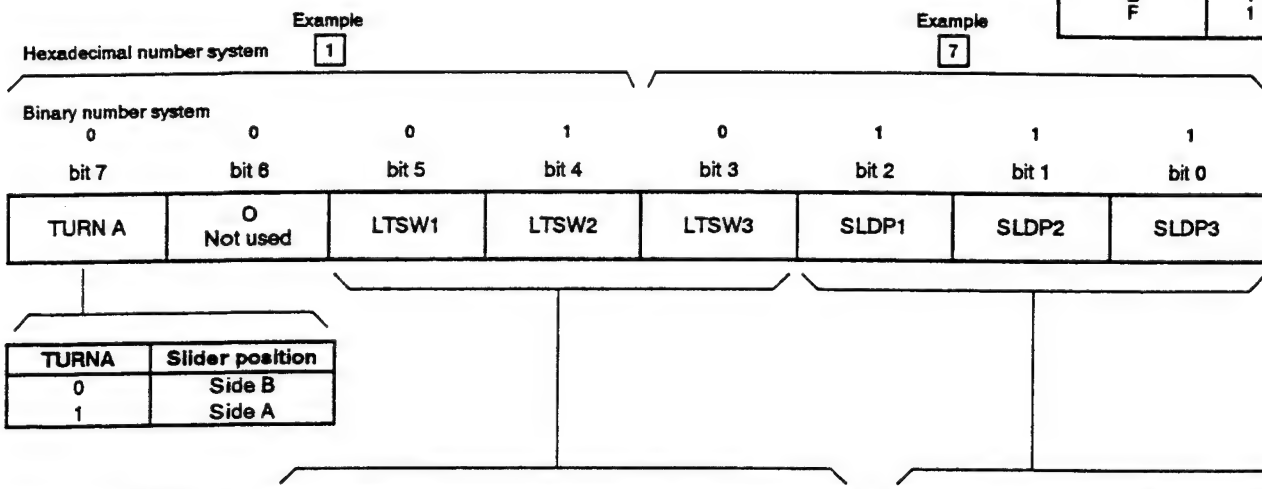
• Mechanism switch information ([1][7])

Example

Hexadecimal number system

Mechanism control → Mode control
Communication byte address 5 (COMBUF5)
(Mode control displays this value as it is.)

Example



TURNA	Slider position
0	Side B
1	Side A

Example of [1][7] is indicated as follows.

Slider : Side B
Tilt : Tilt +
Position : B-INSIDE

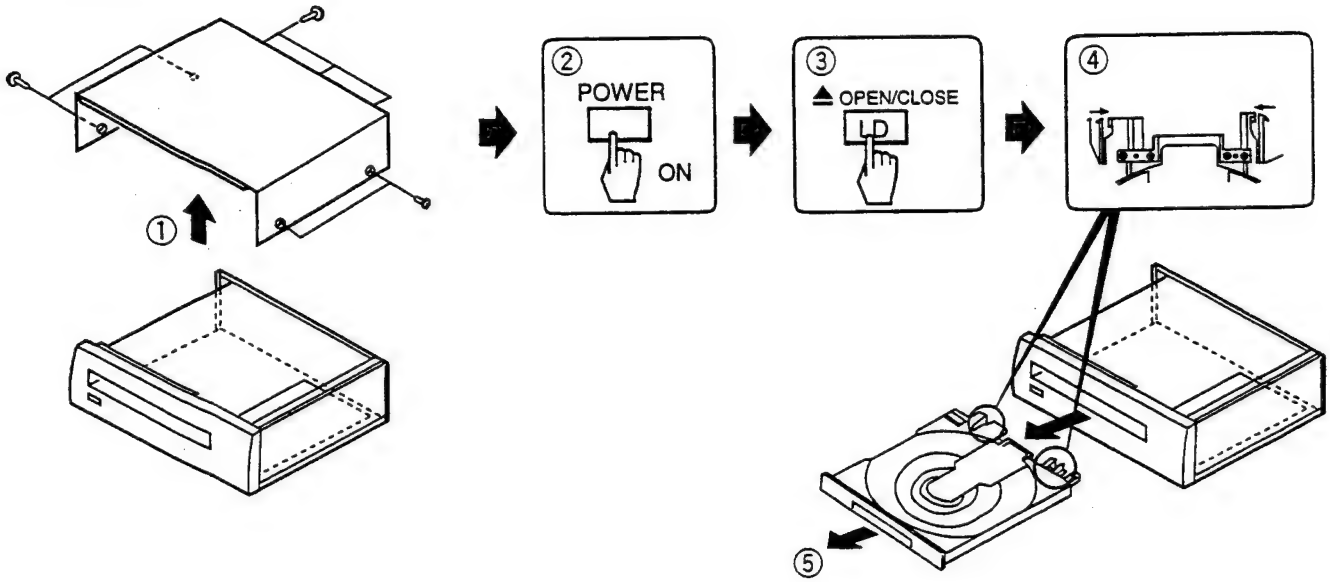
LTSW 1	LTSW 2	LTSW 3	Loading/tilt position
0	1	1	Open (Tray open state)
0	0	1	Loading (During move the tray horizontally)
1	0	1	Standby (Tray close & spindle down state)
1	0	0	Clamp (Durring spindle up or down)
0	0	0	Tilt − (Clamp state)
0	1	0	Tilt + (Clamp state)
1	1	0	Tilt limit (Clamp state)

SLDP 1	SLDP 2	SLDP 3	Slider position
1	0	0	CD active position
1	0	1	CDV active position
1	1	0	LD active position
0	1	1	CD inside position
1	1	1	Side B inside position

7.2.2 DISASSEMBLY/ASSEMBLY

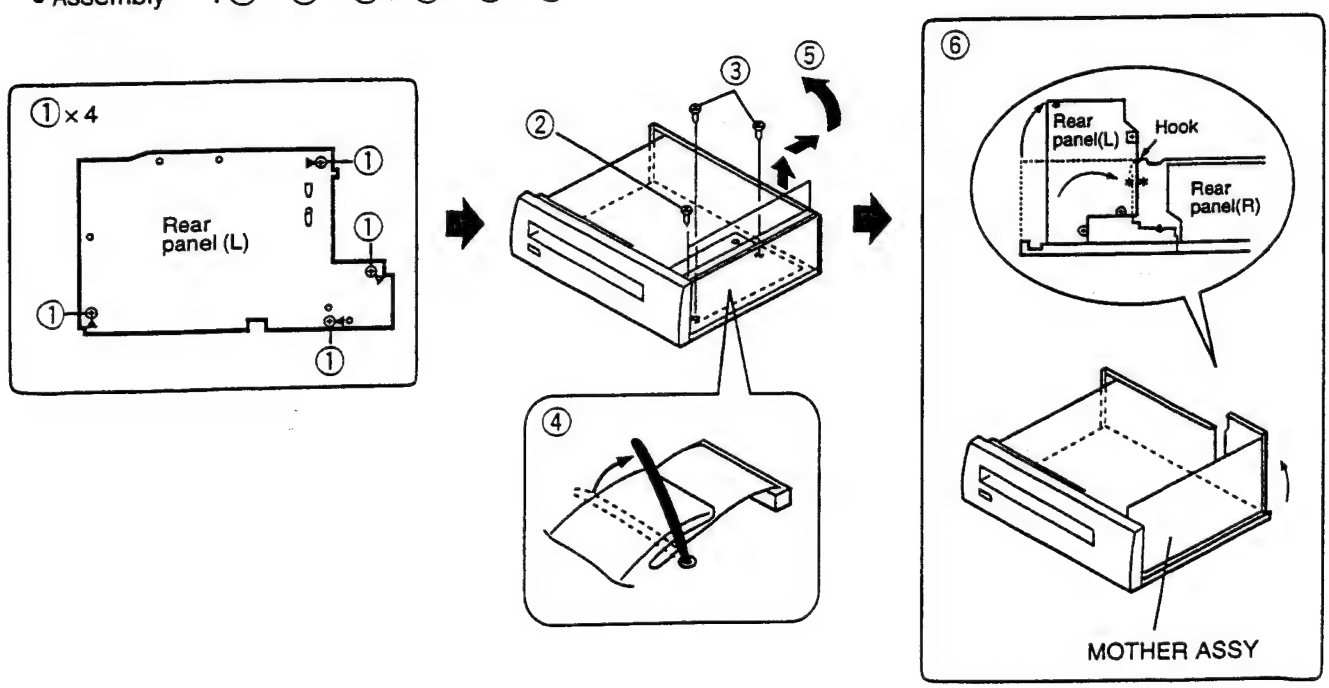
(1) DISC TRAY

- Disassembly : ①→②→③→④→⑤
- Assembly : ⑤→①



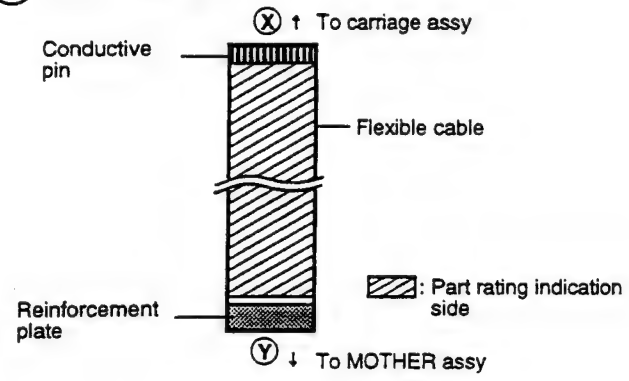
(2) MOTHER ASSY

- Disassembly : ①→②→③→④→⑤→⑥
- Assembly : ⑥→⑤→④→③→②→①

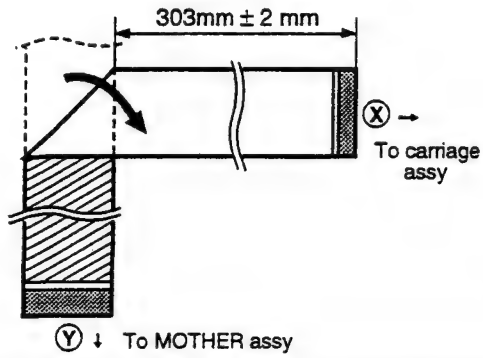


(3) HOW TO INSTALL THE FLEXIBLE CABLE FOR CARRIAGE ASSY

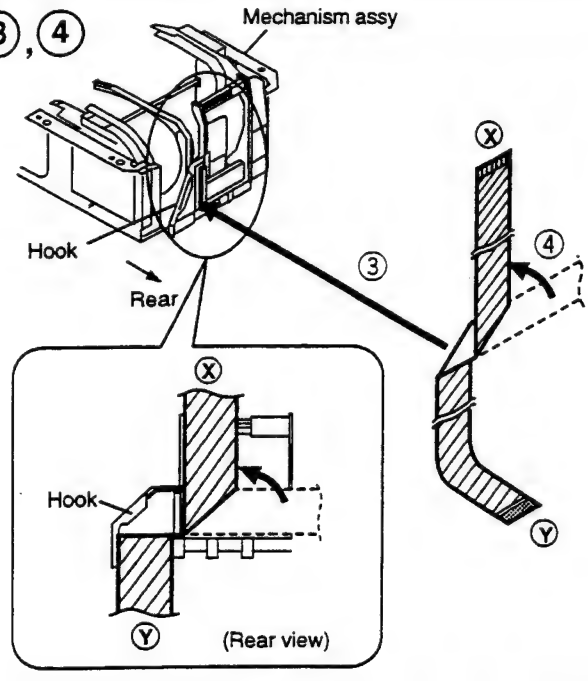
① New Flexible cable



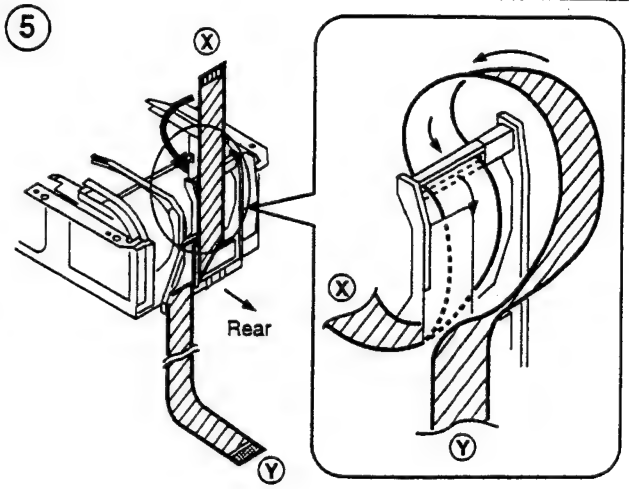
② Bend the Flexible cable



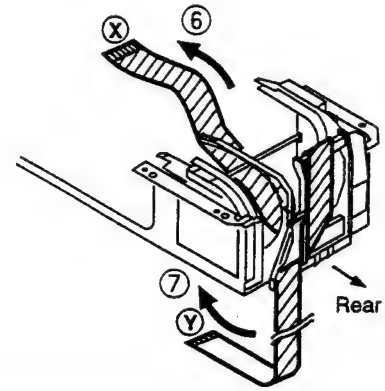
③, ④



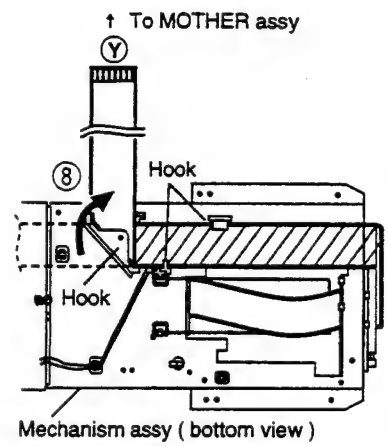
⑤



⑥, ⑦

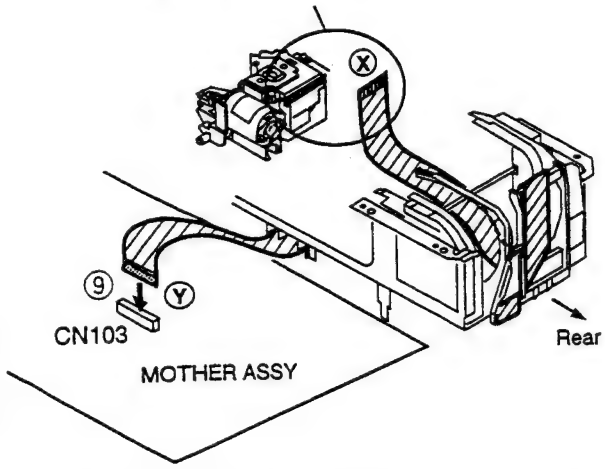


⑧ Turn the mechanism assy upside down

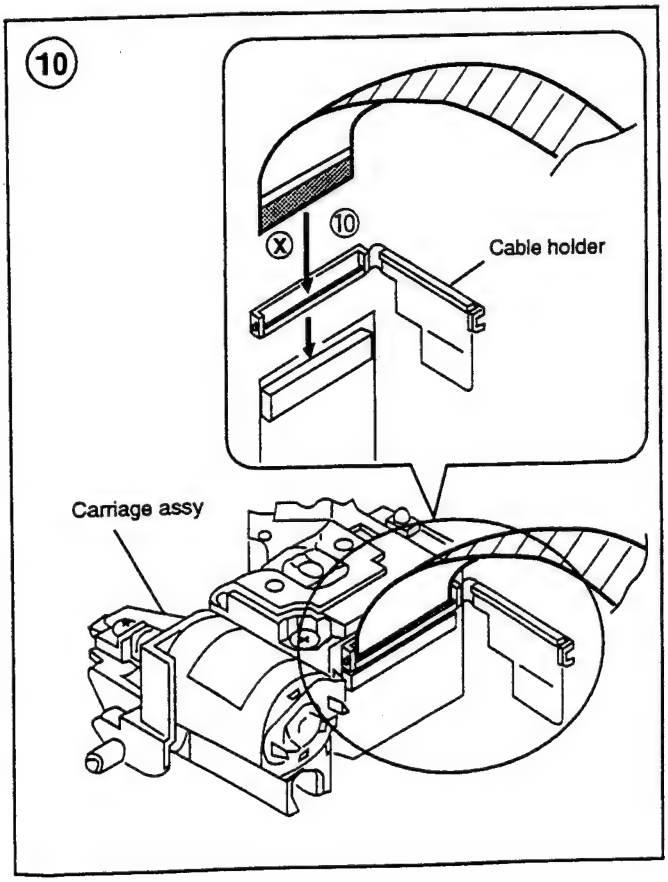


⑨ Caution:
Don't connect the Ⓧ side of flexible cable to the carriage assy in this step.

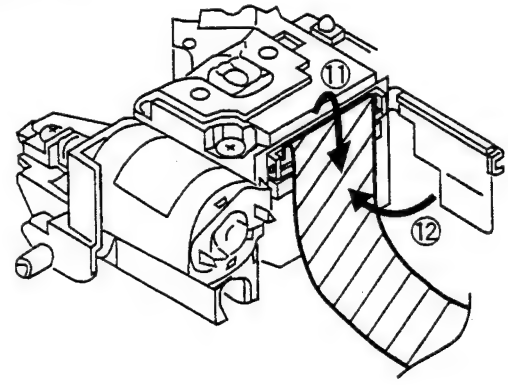
If connect it, the laser diode might be damaged by the static electricity.



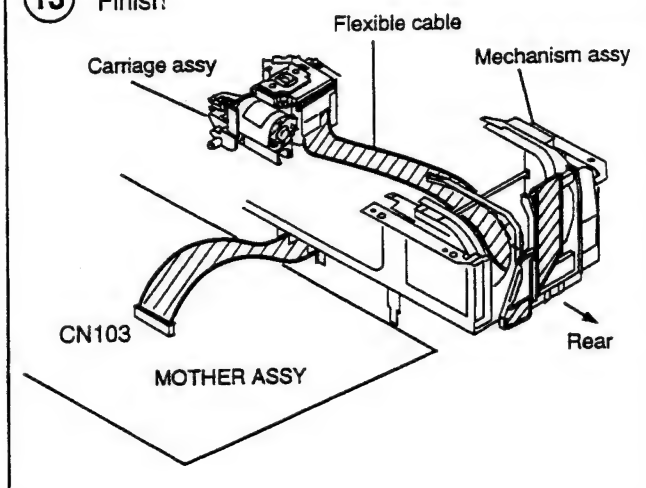
⑩



⑪, ⑫

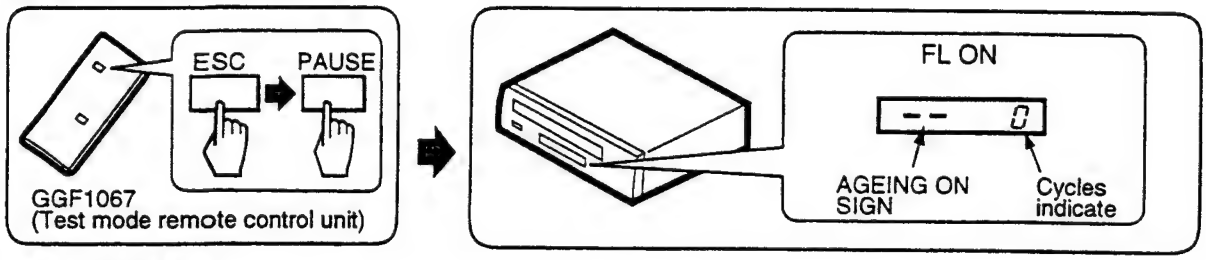


⑬ Finish

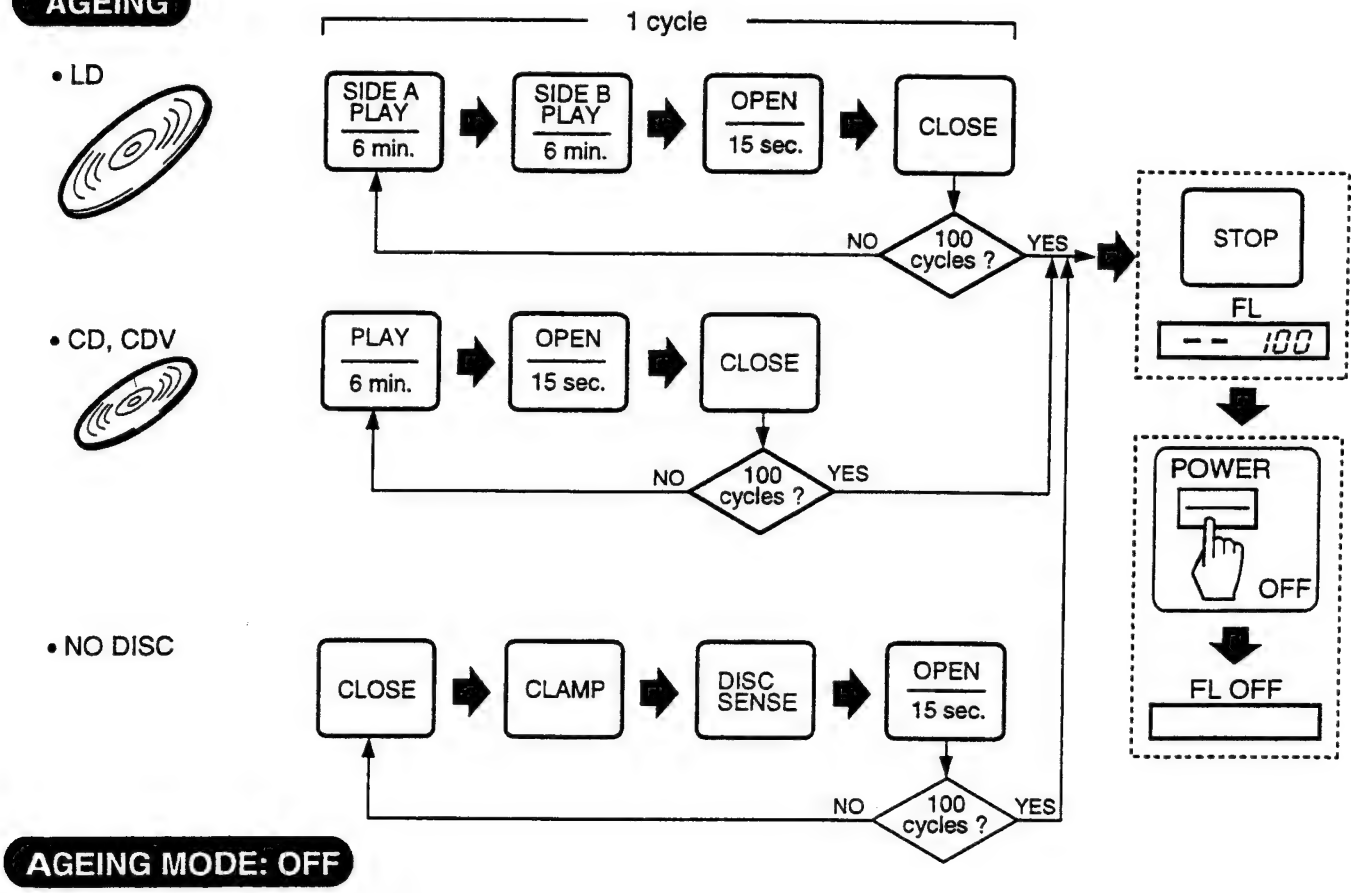


7.2.3 AGEING MODE

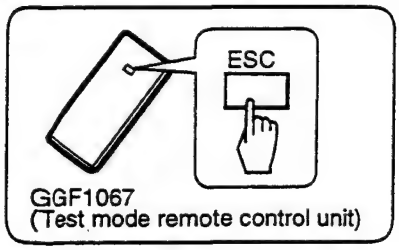
AGEING MODE: ON



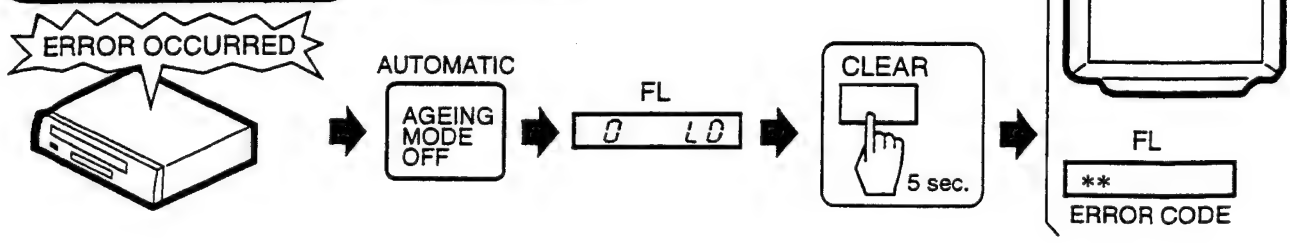
AGEING



AGEING MODE: OFF



ERROR OCCURRED ERROR OCCURED



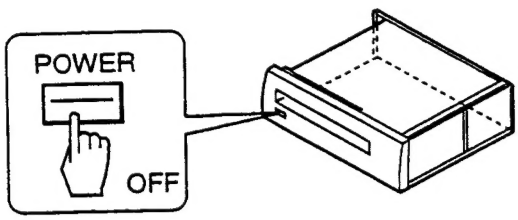
7.2.4 VCD COLOR BAR OUTPUT (DX-V370)

The VCDB ASSY have the test mode which output the color-bar signal independently.

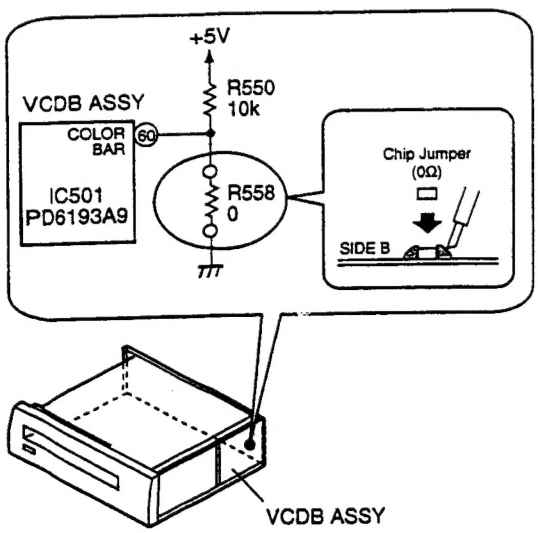
VCD Color-bar Test Mode

Color-bar TEST MODE: ON

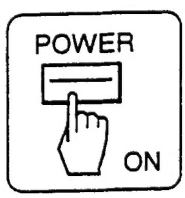
(1) Power OFF



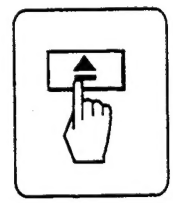
(2) Mount R558 (0Ω)



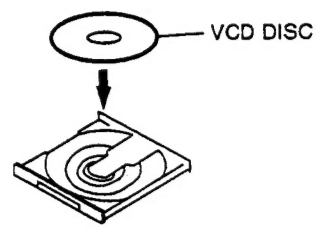
(3) Power ON



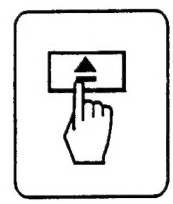
(4) Tray Open



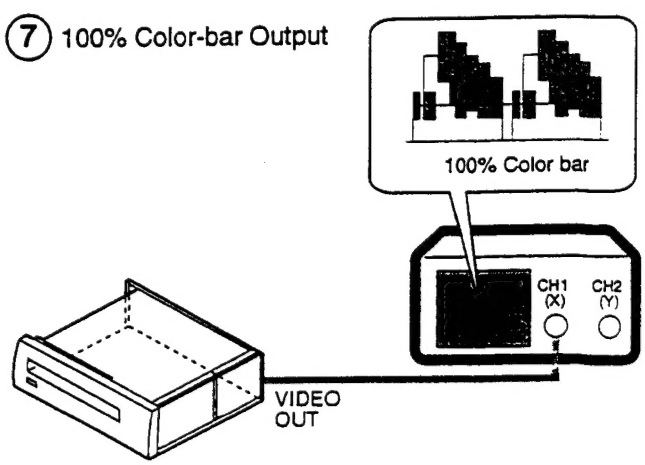
(5) VCD Disc Set



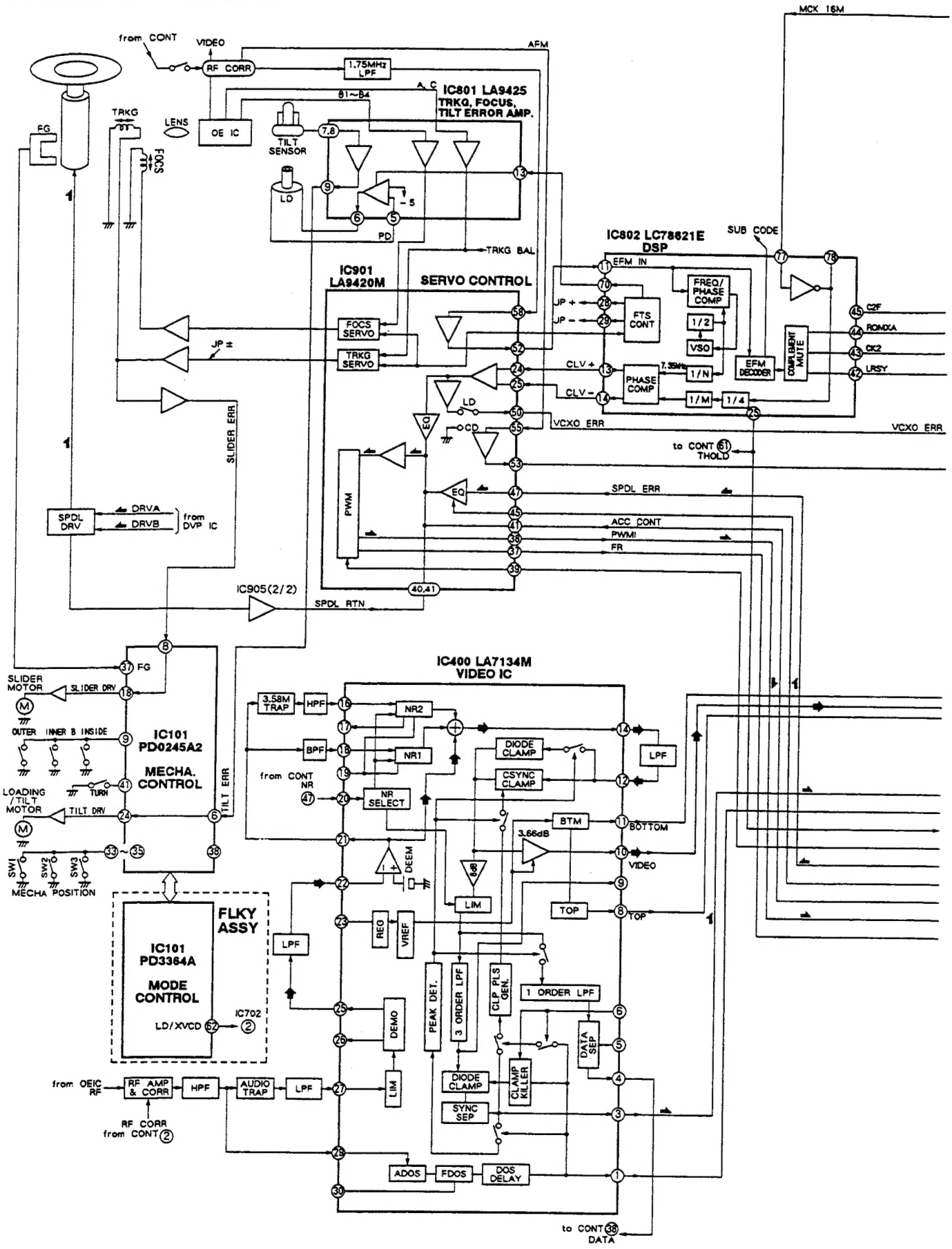
(6) Tray Close

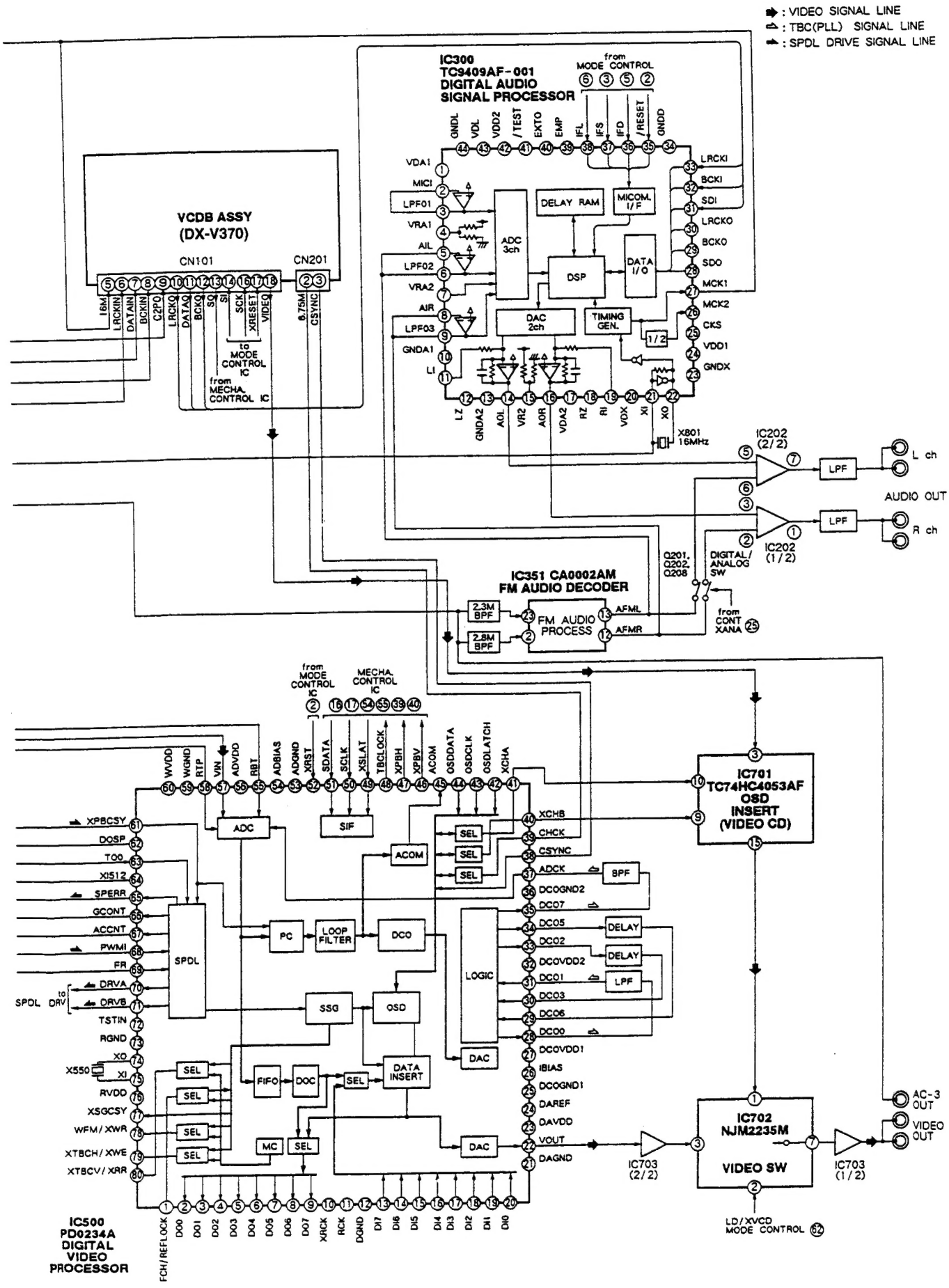


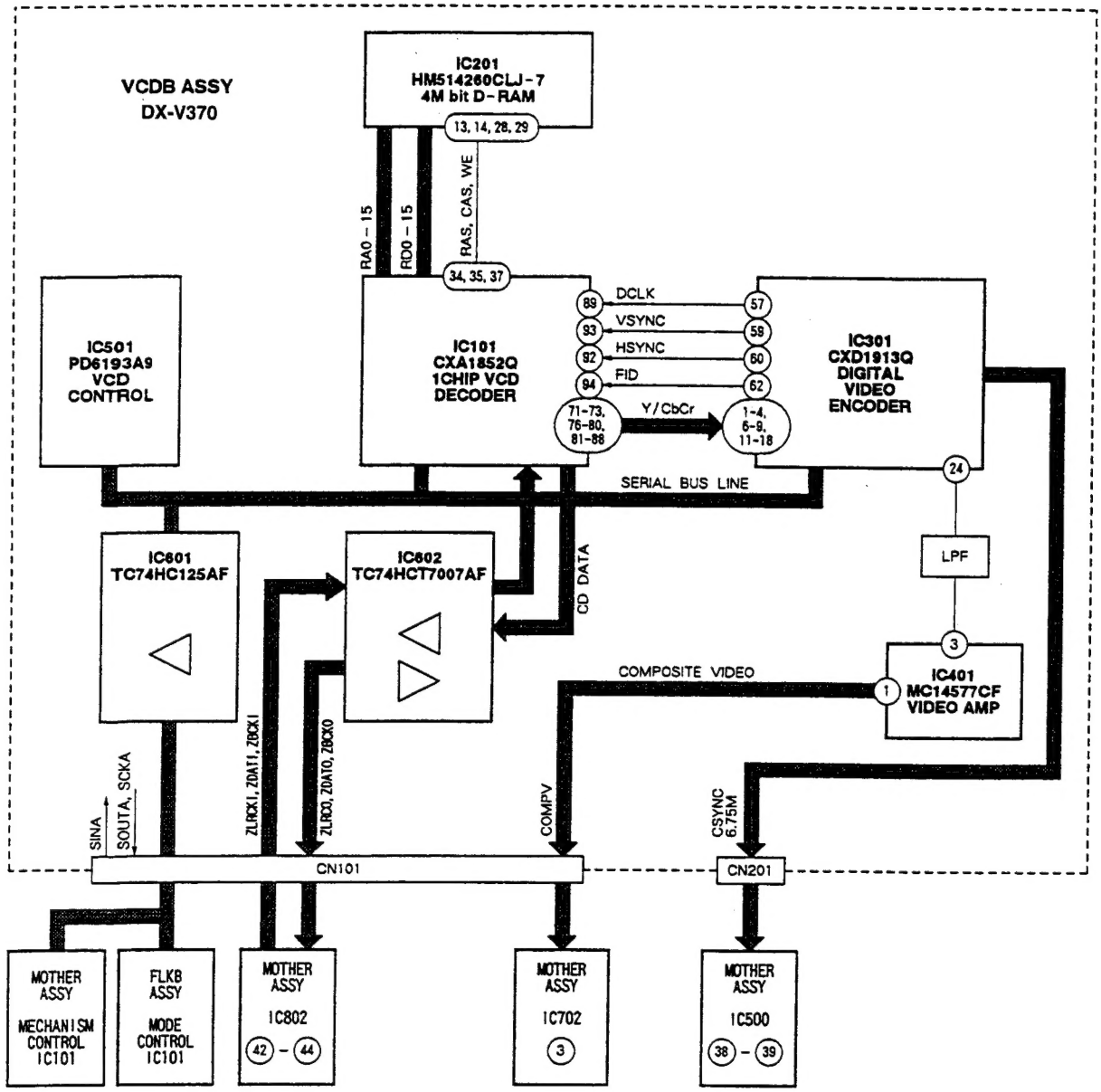
(7) 100% Color-bar Output



7.3 BLOCK DIAGRAM




: VIDEO SIGNAL LINE
: TBC(PLL) SIGNAL LINE
: SPDL DRIVE SIGNAL LINE
IC300
TC9409AF-001
DIGITAL AUDIO
SIGNAL PROCESSOR
from MODE CONTROL
VCDB ASSY
(DX-V370)
CN101
CN201
to MODE CONTROL IC
from MECHA. CONTROL IC
ADC 3ch
DELAY RAM
MICOM. I/F
DSP
DATA I/O
DAC 2ch
TIMING GEN.
X801 16MHz
IC202 (2/2)
IC202 (1/2)
LPF
L ch
R ch
AUDIO OUT
Q201, Q202, Q208
DIGITAL/ ANALOG SW
from CONT XANA
IC351 CA0002AM
FM AUDIO DECODER
2.3M BPF
2.8M BPF
FM AUDIO PROCESS
AFML
AFMR
from MODE CONTROL IC
MECHA. CONTROL IC
IC701
TC74HC4053AF
OSD
INSERT
(VIDEO CD)
ADC
SIF
ACOM
SEL
BPF
DELAY
LPF
PC
LOOP FILTER
DCO
LOGIC
DAC
SPDL
SSG
OSD
DATA INSERT
FIFO
DOC
MC
IC702
NJM2235M
VIDEO SW
IC703 (2/2)
IC703 (1/2)
AC-3 OUT
VIDEO OUT
LD/XVCD MODE CONTROL
IC500
PD0234A
DIGITAL
VIDEO
PROCESSOR


VCDB ASSY
DX-V370
IC201
HM514260CLJ-7
4M bit D-RAM
13, 14, 28, 29
RAS, CAS, WE
RA0 – 15
RD0 – 15
34, 35, 37
IC501
PD6193A9
VCD
CONTROL
IC101
CXA1852Q
1CHIP VCD
DECODER
DCLK
VSYNC
HSYNC
FID
Y/CbCr
89
93
92
94
57
58
60
62
71-73,
76-80,
81-88
1-4,
6-9,
11-18
IC301
CXD1913Q
DIGITAL
VIDEO
ENCODER
24
SERIAL BUS LINE
IC601
TC74HC125AF
IC602
TC74HCT7007AF
CD DATA
LPF
3
COMPOSITE VIDEO
1
IC401
MC14577CF
VIDEO AMP
SINA
SOUTA, SCKA
ZLRCK1, ZDAT1, ZBCK1
ZLRC0, ZDAT0, ZBCK0
COMPV
CSYNC
6.75M
CN101
CN201
MOTHER
ASSY
MECHANISM
CONTROL
IC101
FLKB
ASSY
MODE
CONTROL
IC101
MOTHER
ASSY
IC802
42 - 44
MOTHER
ASSY
IC702
3
MOTHER
ASSY
IC500
38 - 39